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OF THE

Tennessee State Medical Association

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NASHVILLE, TENN., MAY, 1916

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THE JOURNAL *OF THE* **TENNESSEE STATE MEDICAL ASSOCIATION**

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

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VOLUME IX.

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NUMBER 1

OBITER DICTA.*

Presidential Address,

By E. C. Ellett, M.D.,
Memphis.

It is my privilege to open the proceedings of the 83rd meeting of this Society by making, in accordance with custom, an address on a subject of my own selection. Will you permit me first to express in a more formal and deliberate manner than I did a year ago, my very great appreciation of the compliment which you paid me in electing me to this office. The possibilities for earnest and useful work in this position are great, so great that there are many things which I have found only time to think of and suggest. I hope you will agree with me as to their advisability, and in the course of what I will say now, and later in the House of Delegates, the nature of some of these matters will appear. I would also like to thank the many members of the Society who have co-operated with me in the past year in the discharge of certain duties, and more especially would I like to express my indebtedness to the efficient individual who unites in himself the offices of Secretary of the Association and Editor of its Journal. I would feel called on to say very much more of his valuable work if it were not for the fact that in one or both of his official capacities he comes before you every one, and to know him at all is to know

of his energy, enthusiasm and intelligent devotion to his duties. The Society is very fortunate to have the services of such a man.

Something over a year ago there came to my notice a series of articles in one of the magazines discussing the various professions with reference to what each one offered as a career, and the article on the medical profession suggested to me to put into form a number of more or less disconnected things that have come into my mind in the twenty-five years that I have followed that profession. The time element is mentioned more as a confession than as a boast, and furthermore it must serve as an apology for the paternal note which may be here and there in evidence. For the personal note I have neither apology nor explanation.

The position of a Doctor of Medicine in our social structure is too well founded to need any explanation or justification. No profession has given the world a more adequate return for its existence, and certainly no profession has asked for and received so little from the world in return. It may then be assumed that there is not only a demand for doctors of medicine, but that one who follows this calling is doing some good in the world and in the cant of the newspapers, "fills a long-felt want." The public gets more real comfort and value out of him than it does out of most people, and to my mind, the only profession that renders a comparable service, out of proportion to the rewards it receives, is the profession of diplomacy. For let it be said once for all, that the majority of men who hope to do well in a material way had better choose some other calling than medicine, since

*Read at meeting of Tennessee Medical Association at Knoxville, April 4, 1916.

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the average yearly income of doctors of medicine in America is less than \$1,000. There are prosperous doctors, some indeed who may be said to have made money, but where you know of one who lives in comfort, and especially one who leaves a competence to his family, you know of a hundred such merchants, farmers, lawyers and bankers. In those callings, too, a man begins in a position wherein he makes a living, that is, except the lawyers, they are paid to learn, while the medical men must spend years, which are not only unproductive, but years of expense, before he is in a position to make even the moderate income that falls to the lot of most physicians. Thus at the very outset we meet what seems to be a very serious matter. Education is a slow process, and the boys of today are not ready for college until they are about eighteen or nineteen years old. All medical colleges demand at least one year of college work as a requirement for admission, and when the four years of the medical course is completed, with a year or two for hospital residence, which is coming to be a necessity, and even more if some special work is contemplated, the result is that some one has had to take care of that man until he is twenty-seven or twenty-eight years old before he begins to make a living. This is a very serious problem and one that will probably necessitate a readjustment of the primary educational work, especially in the South, where there are not so many parents who feel that they can support a boy this long. It seems to me that the result is that not enough of our desirable young men are attracted to medicine, and I know of no other more apparent reason than this. It is true that a properly trained man can at the time of his graduation sometimes get a position as a paid assistant, but most of us have such exaggerated ideas of our abilities and importance at this time that the older practitioner whistles for our services unless he is willing to insure a full partnership in one or two years. This disease of medical childhood is fortunately often cured by a period of heel cooling and chair warming in the isolation of one's office. A serious objection to this long course of preparation is that it starts one on his life work so late,

when the enthusiasm of youth has begun to wane and the urgent necessity for doing something that yields a monetary return seems to press a bit harder than anything else. Then the desire to found a home and dynasty is sometimes to be considered, and the lady who has waited long, may not be willing to wait any longer. The realization of these ambitions calls material things to the fore and forces science and research out of the window.

We are all sufficiently familiar with the poetic qualities that the good doctor is supposed to embody. Certainly none of us lack faith and hope, but I am afraid what we call charity is often not based on a true charitable spirit. Speaking particularly of those who live in cities, I mean that our hospital and dispensary work, as well as the free treatment of the poor otherwise, is often not based on a desire to relieve their afflictions, so much as a scientific interest in their malady and a desire to improve the opportunity to gain more experience and to work out unsettled problems. If this were lacking I do not think one would go day after day to minister to some man to whom his name is unknown, who will certainly never indicate by word or deed that he has the least appreciation of what is being done, or is in the least grateful for it. The profession is certainly called on to do a deal of work for which it is not compensated, and it has always seemed unfair that we should be further selected as among those to contribute money for the support of charitable institutions. If one would keep a record for a while he would be surprised to see the money value of the services he gives to the poor, and it would seem that the financial support of hospitals, homes and charitable institutions should be contributed by those people whose circumstances justify it and who give no service or time, and but little thought, to the needy. But if the doctor's contribution is to be that of personal service, let him see that he does give that service. There is no trouble about securing proper attention for an individual sick man, but in the broader field of public work help is not so easy to get. I am told that the work on rural sanitation done in this state by the

Rockefeller Foundation, has to be done without material assistance from the local physicians, although the first thing that the men engaged in this work do when they enter a community is to call on the physicians inviting their co-operation. If this statement does anyone an injustice, I would be glad to know it and make suitable amends.

More homely virtues, which are in great demand, and of which the supply is none too great, are, that splendid accomplishment known as 'horsesense,' a fair amount of reasoning power, and, in most branches of the healing art, a moderate ability to use one's fingers. Common sense will carry one, and more to the point, one's patient, over many a shoal, and without this quality the judgment is slow to develop and never attains a very high grade. Common sense enough to see the obvious facts, and reasoning enough to interpret them, are sure to lead to great things. It is not necessary to be a great philosopher, either inductive or deductive, and as far as I know Sherlock Holmes and Dupin stand alone, but there are so many people who can deduce two and two and not see that they make four, that it is not strange if some of them stray into the medical profession.

A doctor should not only be able to plan, but to execute. I do not know whose patients are most to be pitied, those of one who can arrive at a correct diagnosis, but who is without the mechanical ingenuity to do a vaccination or give a hypodermic in a neat manner, or those of one who is a real or fancied Paderewski of the knife, and who carves his way to fame on such material as he finds at hand, without any very considerable concern over the advisability of the procedure. Probably no one wittingly follows such a practice, but there is certainly a vast deal of unwarranted surgery done now when every goose thinks he is a swan.

All work and no play can lead to but one result. More than one of us has had the folly of this course brought strongly home to him, therefore, let me warn you of its dangers and refer you to the laboring man. He demands a day divided into three watches, eight hours for work, eight hours for rest, and eight hours

for recreation. One who sticks to this will, of course, never rise above the status of the laboring man, nor should he, but one's hours should be regulated to a degree, and especially pernicious, in my experience, is the practice of letting oneself be driven at top speed for hours at a time day in and day out. When one is physically able to do it and is ambitious, he naturally will endeavor to respond to all calls made upon him. Even so, a little wisdom in management and a little loosening of the purse strings will enable him to get some detail work taken off his shoulders. An assistant, a trained office helper, preferably a nurse, and the easy access to a good laboratory, will enable a doctor to get many things done, and properly done, without burning up his energy and consuming his time. Other good assistance is a splendid investment. A competent secretary will not only keep his books in order and his collections made with a maximum of efficiency, but she should also be able to take ordinary correspondence entirely off his hands. A tactful person to answer the telephone and receive patients is a blessing from heaven. The phase of this question with which I am most familiar is that which appears to one doing largely office work, but our troubles vary but little in kind and less in degree. For long office hours, read long and lonely rides and weary bedside vigils, and the result is the same. Even in the seclusion of one's home and in the hours popularly supposed to be devoted to sleep, one is at the mercy of the telephone. No one in his right mind would call up one of our large business houses and insist upon speaking to the head of the firm to ask him what time he closed in the afternoon, or what he charges for a pair of shoes, yet people are accustomed to insist that the doctor come to the 'phone in person to answer similar questions, no matter what he is doing or how busy he is. One solution of this problem is to instruct the one who answers your 'phone to always say that you are occupied and cannot come to the 'phone and to have the person calling give his message or leave his number. Since most of our telephone messages, in the cities, at least, resolve themselves into an inquiry regarding office hours or when you can

call, someone else can give this information as well as the doctor himself. One man can, of course, only reach a few people, but if this sort of plan were generally adopted it would be a campaign of education that would produce tangible results. We should begin at home, so to speak, and not ask our fellow doctor to come to the 'phone to answer an inquiry which his office girl can answer just as satisfactorily. To the younger men whose time is not so taken up that they have to lose sleep over the interesting problem of "how to live on twenty-four hours a day," let me give this encouraging piece of news. In a certain place, with the standard of fees and other conditions that prevail, a man can, by being fully occupied, make, say ten thousand dollars a year. By employing an assistant, getting more office space and more office help, he can increase this, but he will find at the end of the year that his increased income, over ten thousand dollars, has all gone to meet the expense of additional help and better working facilities, and he is richer only in responsibilities.

The best possible investment for a doctor is a vacation. It is not necessary to dwell on the many advantages of a rest and change of scene and occupation, as we all realize the renewal of energy and the fresh impetus that one experiences as the result of a proper period of recreation. The ideal vacation, to my mind, is one which takes one far afield, away from the appurtenances of polite society, where he can do as Walt Whitman did, when he "tucked his trousers ends in his boots and went and had a good time."

Another profitable interruption of one's routine, is the time spent in attending medical societies. Of the many things that could be said in favor of this habit, there are two thoughts only to which I would refer. Our hope is in organization, by which we have done so much and can do more. Therefore, do your part, not only in belonging to such societies as deserve your support, but in attending them as well. Some object that the meetings are poor, the papers "puuk," etc. If this is true, think how much you can help your fellows by writing a good paper and reading it to them, and no doubt there are

some societies from which you can learn something yourself. It is well to remember that no one gets much out of any organization unless he puts something into it. I wonder if we generally recognize the obligation that our "Principles of Ethics" imposes in regard to medical societies. Chapter II, Section II of the "Principles of Medical Ethics" adopted by the American Medical Association in 1912, reads as follows:

"In order that the dignity and honor of the medical profession may be upheld, its standards exalted, its sphere of usefulness extended, and the advancement of medical science promoted, a physician should associate himself with medical societies and contribute his time, energy, and means in order that these societies may represent the ideals of the profession." You see, it is not only a privilege and a pleasure to belong to medical societies, but it is a duty and an obligation and that duty is not discharged by merely joining the society, but one must put his time, his energy and his means into it. Those of this society who know of this obligation should try to carry the news of it to those who do not seem to have heard of it, and the result should be an increase in the membership of this Society and an increased attendance on its meetings that would enlarge its influence and magnify its importance many fold.

A most delightful combination of work and play is the journey to other cities, and other countries, where part of the time can be given to visiting hospitals, clinics and physicians and attending the medical societies, and part to recreation. Such trips as these are a source of the keenest pleasure and the reflex benefits of meeting the great workers in our own field are very considerable.

Unless one studies, both books and journals, he is in solitary confinement, and ought, to be consistent, to live in a forest, make his own clothes and build his own habitation. In a way I envy the man who gets by without study, and that some do so must be true because they do not take any journals or buy any books, or if they do, never read them. In more than one doctor's office I have seen files of the *Journal of the A. M. A.*, apparent-

ly complete and neatly stacked, but alas, without a single wrapper broken.

In his zeal for study one must reflect on what Stevenson says in his "Apology for Idlers," that one who spends all his time reading has no time left for original thinking, so that if one's tastes do not lead him to read, let us hope that he devotes the time thus saved to thought. At any rate, reading is not all. Osler has graphically said that while he who tries to learn medicine without books, sails an uncharted sea, he who tries to learn it from books alone, without patients, does not put to sea at all.

Aside from study in its clinical aspects, one should, to get a true appreciation of the subject of medicine, interest himself in the scientific side as well, especially in pathology. This field, much neglected by many practitioners in the past, is now enlisting more and more workers, and in spite of the vigorous onslaughts in some of our local meetings directed against the laboratory and laboratory workers, it is gratifying to see that not a few private laboratories are now in existence in connection with doctors' offices, not only in the cities, but in the small towns and even in the real country, and that the work done therein is with the active and intelligent participation of the clinician himself. And whereas the papers to which we are invited to listen are still too often of the revolving bookcase type, or half-baked clinical reports, we now and then get something of a scientific nature, based on original work. We yet lack experimental work, and it is rather strange that not only the best of the experimental work which we have presented, but practically all of it, is from the older man whose time is otherwise in demand, and so far the younger men, who have the time, have contributed very little.

One passes to well beaten ground when he speaks of the desirability of a doctor having some interest in other things than medicine. Twice blest is he who has some talent in music, and can either in its production or absorption find balm in Gilead. To one without music in his soul, there is still much comfort in well rendered melodies, but to one without talent or a technical education, much that is

called music is certainly far from restful or entertaining, in fact, is as tiresome as a scientific medical lecture would be to one not educated in medicine. Aside from its effect as a medium of culture and a recreation, there is a therapeutic value to music which the profession has never fully utilized. Especially in institutions, even in hospital wards, its proper use could do much to create an atmosphere of hope and cheer, so beneficial to those afflicted in mind or body.

Literature of all sorts is of such a great variety as to appeal to all sorts of people, while a taste for the better sort is easily cultivated. History is always interesting and well worth while, as are books of travel. Much fiction today, as well as most of the current periodical literature, is not only a waste of time, but demoralizing, in that it unfits one for anything else. Poetry is a source of much enjoyment, and great pleasure can be derived from memorizing favorite selections and reciting them to oneself on occasions when alone and unable to read. This practice can also be endorsed as a good soporific, and incidentally refreshes the memory and prevents one's forgetting accomplishments sometimes laboriously attained. Other scientific studies are good for the doctor, such as electricity, geology, zoology, botany, etc. The latter was Weir Mitchell's choice, and of course if one goes into a subject of this sort he must make a hobby of it. Since Bacon's day the field of endeavor has so widened that one who takes "all knowledge" as his province is apt to have a big contract, and the advice to specialize is good advice.

We need hardly caution doctors against neglecting the social side of life. Rather let us utter a warning against overdoing it. The manner in which social functions are conducted in this day makes attendance on them a serious matter, since it usually means loss of sleep and other dissipations. Far be it from me to try to make some pin-headed society devotee see why he should go to a dance at 8:30 instead of 11:30, and leave correspondingly early so that he can give his employer **quid pro quo** the next day, but at least we might conduct our own functions with some intelligence and set a good example. If it

can be done without encroaching on one's working or resting hours, or both, the cultivation of the social side of life should receive due consideration. But when these things mean loss of sleep, neglect of business and too intimate association with Bacchus or My Lady Nicotine, certainly the balance is on the wrong side of the ledger.

The doctor's home life is apt to be peculiar from the irregularity of his work. On occasion I have been told by one who ought to know that a physician ought not to marry. As those competent to judge on this point cannot be depended on to give a faithful expression of opinion, it will probably remain a mooted question. The doctor as a home sharer needs to be judged by rather liberal standards, and on the other hand, a home and family will certainly make demands on the average doctor's time and talents that must be paid for out of the sum total of his professional and scientific attainments. A good English friend of mine, in this connection, once quoted to me something to the effect that "There is no great enterprise, whether of vice or virtue, that is not hindered by women and children." This seems to do justice to all concerned.

But I would not be thought to belittle in the least the influences, always for the better, which are exerted upon us by those to whom we formerly referred as the gentler sex, for in whatever relation she stands to us, she is always to be found, as Dickens so beautifully depicted Agnes, "pointing upwards."

There is only one thing in regard to the relation of the doctor with his patients which is not already the subject of many hollow platitudes, and that is in regard to the subject of the fee. A doctor ought to try to have a clear and fair idea of the value of his services and live up to it. Not an exaggerated idea, as we are prone to have, but a fair one, and people should pay for medical services, not "through the nose," as the English say, that is not extravagantly, but in proportion to the real value of the service rendered and the skill necessary to render it. It is unfortunate that our charges are based on the visit, which is not a proper basis, though I cannot

suggest a better one. A piece of work like a tracheotomy, relief of a strangulated hernia, the arrest of certain hemorrhages, etc., is of infinitely more value to the patient and requires more skill on the part of a physician than a long trip on a bad night to attend a normal obstetrical case or to see some one for whose affliction one can only advise a little more or less questionable assistance to nature's efforts to heal. Yet the fee in the several instances would not differ in a just proportion. We are imposed on very often because we are such poor business men, and there is no more reason why we should not investigate a person's financial standing than should a merchant fail to do so before extending him credit. I do not decry charity, but refer to the unwillingness to pay the usual and proper fees by persons well able to pay. Nor would I forget for a moment that the practice of medicine is a profession and not a trade, but if one must earn his living by it, he should adopt business methods when they are applicable. On the other hand, his study, research, experimentation, charity, teaching work and public service should be done freely and unsparingly, without thought of self or future, and to the glory of the profession that is just the way it is done. The trouble is that we do ourselves and our fellows an injustice by carrying this spirit into a part of the work where it has no place.

I was asked once by a colleague to see a ward case for him in a certain hospital, as he was leaving town. The patient was in a charity bed and said he could not pay for services, yet he had found the means to pay the traveling expenses of five grown sons and his doctor to come with him. This looked pretty bad, but when the doctor proposed to call in and pay a consultant prior to an operation, I rebelled, for if that patient paid out any money for attention it should go to the one who was doing the work. If I remove a man's disability so that he is whole again, or if I do something that shortens his disability, it seems to me that I have done him as much good as if I furnished him a meal or a pair of shoes, but he will find the means somehow to pay for these things, but

not the doctor. A closer parallel is in the case of the lawyer. There's the boy who gets his pound of flesh, regardless of how much blood he sheds in the operation. Some years ago up in Michigan, the governor presided at a meeting of the American Public Health Association, and he spoke of the doctors being there for the purpose of preventing sickness, and he said, "If, during my official career, I should be called upon to preside at a meeting of lawyers, met for the purpose of preventing litigation, then I would say, with Simeon, 'Lord, now lettest thou thy servant depart in peace according to thy word, for mine eyes have seen thy salvation.'"

Co-operation and mutual understanding would obviate much of this imposition, and service would still be rendered without cost to those who deserve it. I must say that these sentiments would apply largely to our men patients alone, as one cannot raise the question with those women and children who are a public charge on account of having an irresponsible and worthless caretaker. Perhaps between this time and the millennium the law will put birds of this feather in jail and make them work for wages that will be turned over to their families.

Much the same thought suggests itself in regard to the relation of the doctor to the public, i. e., to the state. We know that much honest and extremely valuable public work is done by physicians which receives very little recognition and less material reward. As long as we permit this so long will it continue. The profession is never asked for any opinion in regard to purely medical appointments, and institutional heads, superintendents of health, etc., of whose qualifications the profession is the best judge, are appointed on political or other ground, with results that are often far from satisfactory. The history of medical legislation of all sorts everywhere, especially in Tennessee, is a painful and discouraging subject. In view of the attitude of distrust and lack of sympathy with which the public views our efforts, it is a question whether it would not be right if we should refuse to serve the state boards of all sorts, and the staffs of state, city and county insti-

tutions, without compensation. Again let me call your attention to the legal fraternity.

There is one fact in connection with our medical health laws that should stand out for all time as a monument to the altruistic tendencies of the profession, and that is that all of the laws regulating the practice of medicine, the pure food and drug laws, etc., have been put on the statute books by the influence of the medical men and over the protest and opposition of the laymen. It is very true that the laws regulating the practice of medicine tend on the whole to lessen the number of physicians, and therefore lessen competition, but, on the other hand, the requirements of a medical education have been steadily raised by the physicians themselves and competition therefore in another sense, made vastly keener. We have not more doctors, but more doctor, and the people are being more and more protected from ill-qualified and unscrupulous men, for the demand is not only for men of certain attainments, but for men of good character and good conduct. Unhygienic practices, adulterated food, and self drugging make business for the doctor without any question, yet his influence is always thrown in the scale in favor of laws to lessen these evils. There are two things which our National Association has done for which I think too much credit cannot be given. One is that without a line added to any laws it has within a few years brought about a change in the conditions surrounding medical education that is almost unbelievable. It has reduced the number of colleges, admittedly too great, and it has done much to standardize conditions in the colleges which remain. And while no movement of this magnitude and so radical as this can escape some words of criticism, it was all done, not by injunctions and laws and "big sticks," but by education and publicity, and speaking as one who saw these changes from the inside and knows what they meant in hardship, expense and work to the existing colleges, not abundantly supplied with money, I want to say that it was a great work, a much-needed work, a commendable work, for which we ought to rise and call the Council on Medical Education of the American Medical Association thrice

blesed. And when their present plans for a similar regulation and standardization of hospitals is accomplished, they will have added another jewel to their crown of glory. The second big thing that this Association has done is that through their Council on Health and Public Instruction, they are spending \$75,000 a year in a campaign for education in public health, a campaign which is daily bearing fruit and will continue to bear it. An Association that can command the gratuitous services of such men as serve these committees and secure from them the enormous amount of hard, faithful and intelligent work that they give to the discharge of their duties, may have a few flaws in its structure, but it is certainly sound at the core.

If there is a way of bring it about, it would be a very desirable thing to start a movement at this meeting, looking to a recognition of the medical profession as represented by this Society in the making of appointments to the State Board of Health, the State Board of Medical Examiners, and the heads of state institutions, such as insane asylums. We should congratulate ourselves that the men appointed to these places under the present system are as efficient and worthy as they have almost always proven themselves to be, but nevertheless the system is wrong, and these appointments, if not made on the nomination or recommendation of this Society, at least should be made from a list of names endorsed by this Society as fit for the positions. It is a shame that so little scientific medical work has ever come from any of our great state medical institutions, and this condition becomes more deplorable when you compare it with what is done in other states and countries. Psychiatry and neurology are so closely connected with the names of certain great asylums that it must be apparent what a wealth of material exists in those places, and equally apparent how the material is dissipated in this state. Not that it necessarily requires a great deal of material to work our problems. We know that Lister demonstrated his ideas in regard to antiseptic surgery in one small ward, and Killian, who has done so much in the submucous resection of the nasal septum, bronchoscopy, and the radical

frontal sinus operation, never had a large clinic at Freiberg, where most of the work was done. Marion Sims worked out his operation for vesico-vaginal fistula on a few patients, and Long made anesthesia more than a dream on still fewer. If the fires of genius burn steadily and are fed with energy and intelligence, the flame, though small, will surely be seen around the world.

In this day of specialists one is often called upon to refer a patient to another physician for some special diagnostic procedure, such as a laboratory test or X-ray examination or for an affliction of some particular organ, such as an eye or a tooth, with whose ailments many physicians are not familiar. In justice to our patients we should be ready to recognize our limitations, and one who persists in his attendance on a patient with whose afflictions he is not familiar, should be discouraged, and it certainly is a strain on the professional relation which should exist between all physicians to be called on to uphold a fellow practitioner who has come to grief as the result of such a course. Not long ago, I saw one of those pitiful cases of ophthalmia neonatorum where the child had lost both eyes. No prophylaxis had been used, and the treatment according to the attendants, had consisted in applications of cocaine and adrenalin. Now that man was a criminal and a malefactor, a disgrace to the profession, and if I upheld him in what he did, I would be in effect saying to that family, "This is a visitation of Providence. If you or your friends have sore-eyed babies, nothing more can be done for them than was done for this baby; your physician is a good man and worthy of your confidence." God forbid. No man can cover the whole domain of medicine satisfactorily. If he cannot diagnose all complaints he ought to know a seriously sick man when he sees him, and be bold enough to call for help, and in the case of an organ of which he knows nothing—like the eye or teeth—he ought not to pretend to know. Of course, this is an academic question to most of us, but if your baby is blinded for life or your child maimed or killed by the lack of ordinary honesty or com-

mon sense on the part of one you have to trust, it becomes a different thing. Medicine is so far from an exact science that errors of judgment necessarily occur, and unfortunate issues are frequent as well as unforeseen. Let us not make matters worse by stupidity and carelessness, nor uphold others when guilty of these faults.

Some people advise against the study of a specialty as a course apt to narrow one's ideas. That may be, but in order to get anywhere, one must concentrate his energies on one or a few things. In the industries one man does but a small part in the manufacture of a certain article, but each one by doing his part well, contributes to a successful product. One should strive to keep the fact in mind that his special work is but a part and not the whole of medicine. Even within a specialty one gains special skill in a certain thing, as some surgeons are skilful in goitre operations, others in joint work, and he who can become a master of even one small part of a specialty is a man to be envied.

In the multitude of papers which are written, published and sometimes read, it is curious to see how seldom the writer really does himself credit. This is usually due to haste, or to the fact that one tries to make a twenty-minute paper out of the material for an epigram. A short paper will attract attention. The first description of the changes in the retinal vessels in arteriosclerosis was a single paragraph in a paper by Mr. Marcus Gunn, and all the material that has been written since that time has not added one idea to what was expressed in that paragraph. The other side of the shield is the individual who makes his facts fit his theories. Garbled statistics, misquoted cases and facts otherwise perverted have gone to make up many a smooth-sounding and impressive paper, which reflected great credit on its skilful author, and be it said with sorrow, that such papers have sometimes been presented to this Society.

If one ever expects to report anything or to write any papers, the habit of the proper keeping of case records should be early acquired. One's tendency at first is to record too much, from which he quickly passes to

recording too little. It has always seemed to me that undue prominence was given to the family history in record making, and as one whose faith is more in environment than in heredity, my idea would be to concentrate on the personal history and that of the present illness. What this should show is what the patient complains of and how long he has complained. For models of histories, the ones given in MacEwen's "Polygenic Diseases of the Brain and Spinal Cord" have always appeared to me as the most excellent.

Parenthetically, let us strive to clothe our matter in language that is pure and simple, not only pleasant to read, but easy to understand.

Too much cannot be said in favor of the practice of promptly and properly making such records. It is a great deal of trouble and gets to be a burdensome task as time goes by, but records are a storehouse of one's experience and certainly add much to the satisfaction with which one's work is done. While the labor is considerable, it adds greatly to the value of the records if they are cross indexed as to diseases. It is certainly worth something for a man to be able to state accurately in a discussion as to what percentage of his cases in twenty years have needed forceps, what his mortality in typhoid in thirty years has been, or in what percentage of certain surgical cases he has had recurrence of the disease or infection, etc. Only case records enable him to tell, and without them his statements are vague and his conclusions unconvincing, as they deserve to be.

We are meeting this year at the home of our state university where most of its departments are located, and the opportunity will probably be given us to inspect the institution and to meet those who have its destiny in charge. As the head of the public school system in the state every one who aspires to be a good citizen should familiarize himself with the possibilities of this institution, and when the good citizens know of them, it is to be hoped that pressure will be brought to bear in high places so that this university and the cause of public education for which it stands will no longer be the

plaything of politicians and the football of politics, and that the methods which resulted in the withholding of the appropriation from this worthy cause at the last legislature, will not again be practiced.

The reformation of the medical press, like John Brown's soul, is "marching on," and while it yet lacks a great deal of having attained the level which it is certain to ultimately reach, its progress has been no less remarkable than it is commendable. It is especially in reference to the character of the advertising that it carries that the medical journal needs to be constantly on guard. There are a few journals which carry no advertising at all. The Journal of our National Association and most of our state journals carry only the advertisements of those houses whose products have, through a frank statement of their contents and an absence of unfair claims as to their therapeutic value, received the approval of the appropriate committee of the A. M. A. We may not agree with this committee in every case, but it is our committee and its findings and the evidence on which they are based are freely published, and in the absence of any other standard, this is the best one to follow in determining the character of a pharmaceutical product. There are yet many journals patronized by the best men in the profession, both as subscribers and contributors, who are no more careful of their advertising than a religious paper, and hardly as much so as the average daily. It is inconceivable how many periodicals will permit things as advertisements that it knows to be false and fraudulent. No amount of expostulation can make them change this practice, though they will admit that the stuff they help to exploit is a fake. You remember Holmes said that "Quackery travels on two crutches, the tattle of women and the certificates of clergymen," and when he wrote that he must have had a religious weekly before him. The law has made quackery unpopular, but the charlatan has an accomplished successor in the patent medicine manufacturer, who salves his conscience and stills the critics at one stroke by munificent gifts to the church and charity, and carries this to a point where he can pro-

cure a certificate of character from members of the medical profession.

Schools of medicine are happily becoming things of the past. Homeopathy and Eclecticism have made no progress, if indeed they have not lost ground in recent years. Since 1904 the non-sectarian medical colleges have been reduced in number 36 per cent, while the homeopathic colleges have been reduced 63 per cent and the eclectics 60 per cent. In students the non-sectarian schools have been reduced 44 per cent, homeopaths 61 per cent, eclectics 76 per cent. In graduates the non-sectarian schools have been reduced 36 per cent, homeopaths 53 per cent, eclectic 75 per cent. Of the whole number of physicians in this country in 1915, 85 per cent were non-sectarian, 10 per cent homeopaths and 5 per cent eclectics. In some sections they hold on pretty well and still seek to tar us with the same stick by calling us "allopaths." The most recent school of healing to make a serious bid for favor was osteopathy. There are more other kinds of praetors, pullers and healers than I have the patience to enumerate, but they do not warrant a second thought. Osteopathy was founded on a mechanical theory, which need not be discussed, and it is only mentioned to bring your attention to what is happening in that school of healing. To begin with, while they were long known as osteopaths, they are dropping that term and calling themselves, and apparently wish to be called, "osteopathic physicians." Their journals contain the advertisements of books written by physicians, such a Dorland's Dictionary, Jelliffe's Dictionary, Santees' "Anatomy of the Brain and Spinal Cord," and books by Asch, Bing, Krause, Romer and other M.D.'s. They also carry advertisements of drugs, and significantly those which do not always have the whole-hearted endorsement of the Council on Pharmacy of the A. M. A., namely, bounin, malted milk, listerine, anti-phlogistine, nujol and other oils, hemaboloïd's, etc. If these things do what they claim to do, what interest can they have to an osteopath? To judge the school by the utterings of a single individual would be very unfair, just as we would not like to be judged by the papers of certain physicians, but it might

be mentioned that the articles in their journals deal with such subjects as "Food as a Medicine," "Treatment of Malaria" (by diet), etc., which seem a bit removed from the basic claims on which the school is founded. The literature to which they refer in their articles are such journals as the *Journal of the A. M. A.*, the *London Lancet*, etc., and such authors as Gould and Pyle, Hughlings-Jackson and George W. Crile. Their schools are rapidly falling in line with the prevalent ideas on the subject of medical education, and the original school of the cult has announced that they will go on a four-year basis with a preliminary requirement of a high school education, in September, 1916. Moreover, a former President of the American Osteopathic Association, in a signed editorial in the *American Osteopathic Journal* for December, 1915, urges the broadest teaching, and that they take the stand that since they have to practically meet the same legal requirements that a doctor of medicine has to meet, that they should not receive a license to do a limited practice, but an unlimited practice. The proposition will not be new to you, having been in one form incorporated in our own recent law, that to secure a license to treat the sick, a man should show evidence of proper preliminary education, a proper course of study in all branches of the healing art, and its allied and fundamental sciences, that his acquaintance with drugs and other forms of treatment, except surgical treatment, be not called into question, and when he has satisfied the authorities on these points, he can treat the sick as he worships God, "according to the dictates of his own conscience." If I read the signs of the times correctly, such a law would enlist the support of the osteopaths, and such slight opposition as the vanishing forces of homeopathy and other schools might offer could probably be easily overcome. In this I see the early, final and satisfactory solution of a question with which we have struggled long, in which solution Tennessee may claim the honor of having blazed the way. An incident which happened a few months ago in the family of the editor of one of the leading osteopathic journals, has done much to move this school from itself satisfied

and self-confident attitude. This unfortunate gentleman had a son who was taken ill with diphtheria. None of the osteopaths knew what it was and the treatment that was applied was followed by disastrous results, in that the little patient succumbed, a diagnosis being made by a physician just before death. The incident must excite the greatest sympathy for the afflicted father, whose inquiries revealed the fact that this and many other diseases are not shown in osteopathic schools, and one is forced to put the question, to how many other men's sons has this thing happened through the shortcomings of osteopathic training. An experience of this sort, with the publicity attending this case, will do more to remove the scales from their eyes than books or argument.

There is one thing that happens now and then to indicate that in some quarters we are regarded as the "regular" profession in every sense of the word, and that is when you receive a circular letter from a confrere asking for your "rules" in regard to the treatment of certain conditions. I have never formulated but one and that was to try to avoid doing anything in medicine by "rule." "Always" and "Never" are words that have very little use in medicine, and the exceptions would soon swamp any but the most elastic variety of rules.

All of the forces antagonistic to regular medicine sought to pool their interests in a "League of Medical Freedom" and by lectures and a periodical sought to impress people with a fear that some sort of movement was on foot to choke off all opposition to the regular school of medicine, and force people to be treated by one class of healers and presumably by one plan of treatment. It has never appeared exactly who was behind this movement and who furnishes the war chest, and in an effort to learn something about it, some of us in Memphis attended one of their lectures a few years ago. It was given in a woman's club, by a homeopath, and he was introduced by a local lawyer, of whom I will only say that he was just about the type of man that you would expect to find engaged in such a function, and whose name enabled you to recognize him as one of the race who are

chronically "agin the government." The only thing the lecturer did was to attack the Owen's bill, then pending, and compulsory vaccination. Now, I know, what you think of these movements, and you know what I think of them, but it may interest you to hear what a little lay weekly called the "Democrat," published in Lamar, Mo., thinks of them. In an editorial (June 10th, 1915), it refers to this paper on Medical Freedom, as "threatening us with a vast medical trust, poisoning us with deadly serums and vaccines, gagging us with nauseous decoctions of mephitic herbs." The editor can see nothing interfering with medical freedom. "Is there," says he, "any damn fool 'ism and absurd elaim, any 'Eny, Meny, Miney, Mo' business, that we cannot try upon our diseased and tortured bodies, if we are so minded?" He contrasts the conduct and achievements of regular medicine with those of various schools, cults, 'isms and creeds that would supplant it, in the following language:

"The regular school of medicine is fallible. There are many things it cannot do. But it never ceases in its search for truth. The laboratory and the clinic room are its foundation and inspiration. What has become of cholera? What has become of infant diarrhea? What has become of smallpox, once a terror equal to plague? What has become of diphtheria and membranous croup? Who is gradually conquering tuberculosis, the greatest of human plagues? Who has dissipated the dread spectre of hydrophobia? Who achieved the marvels of modern surgery? Who is frantically and supplicatingly in demand upon those long battle lines in Europe? Is it chiropractics? Is it osteopaths? Is it Christian Science healers?

"Those who seek to overthrow the regular practitioners found their assumptions upon a combination of superstition, and a wooden-faced denial of physical facts. They come and go like the passing seasons. They make no great scientific discoveries. They garner no tomes of physical knowledge. They are found in the end to be based upon pretence, gullibility, superstition and esoteric moonshine.

"The regular school makes mistakes. It

needs watching. It should never emerge to that haughty eminence where it will not receive its full quota of brain-clearing, humility-preserving kicks; but forget not, brethren, it is the salt of the earth, and suffering humanity's one dim and distant star of hope."

TENNESSEE STATE MEDICAL ASSOCIATION.

Minutes of the Eighty-Third Annual Meeting,
Held at Knoxville, April 4, 5 and 6, 1916.

First Day—Morning Session.

The Association met in Elks' Hall and was called to order at 10:15 a. m. by Dr. L. L. Sheddan, Chairman of the Committee of Arrangements.

Prayer was offered by Rev. George R. Stuart, pastor of the First Methodist Church, Knoxville.

Invocation by Dr. Stuart.

Our Gracious, Merciful and Heavenly Father, we come, first of all, to pay Thee our tribute of praise and thanksgiving for the good Providence that has led us through another year and brought to this annual assembly in honor, health and strength. We thank Thee for this wonderful profession. We thank Thee for the discoveries and for the various gifts of Nature that Thou hast bestowed for the relief of the sick and for the relief of suffering humanity. We thank Thee that Thou didst plant in Nature these wonderful qualities, and that Thou didst lay Thy hand upon the human brain and revealed its mysteries and made it possible for these men to relieve the sufferings of humanity. We thank Thee for the discovery of electricity; we thank Thee for the discovery of anaesthesia; we thank Thee for the discovery of those medicinal qualities that enable these skilled men to bring relief to suffering mankind. Let Thy blessing rest upon this great body of Christian gentlemen who go into our homes at every hour of the day and every hour of the night. We thank Thee for the men in whom we can repose our confidence, that will not abuse our home relations nor disturb our domestic felicity, nor will in any way by their example influence or mar our home life. We

pray Thee, our Father, that this body of men may realize to the very depth what their position is and what their responsibility is as they stand between the living and the dead. Teach them kindness and gentleness in their professional work. Deliver us from corrupt men who would sneak into homes and pollute them. Deliver us from those men who would by scientific methods break the law of Nature and debauch its laws. Grant, our Father, that these Christian gentlemen may bring into this great body more and more the great moral truths that will enable them and their fraternity to stand up for the best that is in life and that is the truest in our relations to one another. Our Father, bless them in their deliberations, lead them into those channels that will give them more and more skill in the relief of suffering, and bless us this morning and throughout our lives. Bless the wives and the little ones that they have left behind while they deliberate for the good of humanity. We ask all these things for the Redeemer's sake. Amen.

Address of Welcome by Mayor J. E. McMillan, Knoxville.

Mr. President and Gentlemen of the Tennessee State Medical Association: It is my pleasure and privilege this morning, as the Mayor of the City of Knoxville, to welcome the distinguished gathering that appears before me. As a plain business man, I am somewhat unaccustomed to making public speeches, and I must ask the pardon of this gathering if my speech seems short, but I assure you, gentlemen, that whatever it lacks in length it is made up in sincerity.

The medical profession in Knoxville (I am supposed to be addressing visitors just now) is composed of men of the highest type of character, and they represent the highest type of citizenship within our borders. I venture the assertion that Knoxville is freer from fakes and quack doctors than any city of its size in the United States. (Applause.) Judging the Association of Tennessee by the personnel of the profession in Knoxville, it is indeed an honor to welcome you here this morning. I shall not take up your valuable time to boast to you of Knoxville, for I feel

assured that after you have been here a while you will be convinced that we have one of the best progressive cities of its size in the South. But it is my pleasure and pleasing function to extend to you gentlemen in the name of the citizens and on behalf of the citizens of Knoxville a warm and cordial welcome to our city. We ask you to take advantage of our hospitality. We want you to become acquainted with our citizens, and I hope that this acquaintance will develop into a true friendship. I wish for this convention in its deliberations much profit and pleasure. I thank you. (Applause.)

Address of Welcome on Behalf of Knox County Medical Society by Dr. W. S. Nash.

Mr. Chairman and Gentlemen of the Tennessee State Medical Association: I am delighted to have the opportunity on this occasion of expressing to you the true sentiment of organized medicine for Knox County. There are differences and distinctions drawn in life, and there are many things that can be said. There is much that can be done, but we of East Tennessee have a personal pride, believing as we do, through ignorance possibly, but we believe it just the same, in offering to you a welcome that cannot be exceeded by any people of this great old state. There is not a doctor within the sound of my voice coming from East Tennessee but who is a true, loyal participant in this welcome. There is not a man but who will do something for you if the occasion arises. The sincerity and loyalty of East Tennessee have been most marked in all the affairs of life, political, social and domestic. You cannot go anywhere or talk about anything that an East Tennessean does not know something about. Doctors know something, preachers and lawyers know a little something about it. But we have managed to live in that straight and narrow way, all of us trying to keep upon the right side until we have practically banished the charlatan and the quack, until we have brought organized medicine, as we believe, to a reasonably high standard, and in presenting to you our best wishes we do it solely through organized medicine. We are not here as a bunch of "roughnecks" to say

that the city is yours and you can do as you please, but we are here to say to you that we are your fellowmen who enjoy the respect of the community in which we reside; that we are proud of our position as social physicians and as medical men, and along these lines we are more than glad to welcome you to our midst, for we feel organized medicine in this city is one of the greatest treasures or accomplishments in the state. While the battle grounds of Europe are being covered with blood, while it is painful to think of it, and while the extent of the devastation is unknown or cannot be fully appreciated by us, there are those today who are fighting the battles of humanity in a quiet and dignified way in the homes, the laboratories, and elsewhere. They are waging a battle that is productive of much more good than comes from the world powers who are striving to conquer each other under the stars of heaven. We have set about in a quiet way to do something for our people, and the good doctors here today are just those men who, out of the goodness of their hearts and love for their profession and its advancement, have come to discuss vital issues which may be exercised and practiced upon you before the day is done, and certainly it is for the good of the common cause of humanity and for the citizenship of the dear old state in which we live.

We are all workers in a common cause. We are here for a sincere purpose, and Knox county stands behind you to bid you welcome and to do everything that can be done upon the part of organized medicine to make your stay here just as pleasant and profitable as it can be.

It is true within a comparatively short time we have had reverses. The Imperial Hotel, which was first selected as the meeting place for the Association, was burnt down, so that we cannot invite you to that dear old hostelry. We have not a beautiful Patten Hotel nor a Gayoso, but we can give you the best we have, and above all, we give you a heart full of love, a heart full of professional love, and we will do for each and every one of you everything that is in our might to do. Knox County Medical Society gladly welcomes the Tennessee State Medical Association to this

city, and on behalf of that Society permit me to say that so far as the membership of that Society can go, with open arms and big hearts, we welcome you to Knoxville. (Applause.)

Report of the Chairman of the Committee on Arrangements.

Dr. L. L. Sheddan, Chairman of the local Committee on Arrangements, announced that the Stratford Hotel had been selected as headquarters of the Association. He also called attention to the other hotels which would accommodate the members.

At nine o'clock Wednesday evening, the Knox County Medical Society would give a "speechless banquet" to the members and visiting physicians at the Lyceum.

Dr. Brown Ayres, President of the State University, extended an invitation to the Association to visit the university at 4:00 p. m. Wednesday.

The President, Dr. E. C. Ellett, Memphis, then took charge of the meeting and delivered his address, which was entitled "Obiter Dicta."

On motion of Dr. S. S. Crockett, a vote of thanks was extended to the President for his address and the address was ordered published in the daily press in full.

Dr. C. N. Cowden, Nashville, read a paper entitled "Surgery of the Gall Passages," which was discussed by Drs. Haggard and Litterer.

Dr. E. Dunbar Newell, Chattanooga, read a paper entitled "An Analysis of One Hundred Consecutive Cases of Appendicitis Operated Upon at the Newell Clinic." (No discussion.)

Dr. J. B. McElroy, Memphis, read a paper on "Functional Kidney Tests," which was discussed by Drs. Bromberg, Carmichael, and the discussion closed by the essayist.

On motion, the Association adjourned until 2:00 p. m.

First Day—Afternoon Session.

Dr. W. H. Witt, Nashville, read a paper entitled "Some of the Features of History Taking," which was discussed by Drs. Haggard, Sheddan, and in closing by the essayist.

Dr. H. M. Tigert, Nashville, read a paper entitled "Some Surgical Considerations of

Gastric and Duodenal Ulcer," which was discussed by Drs. Barnett, Williams, Thielen, and discussion closed by the essayist.

Dr. William R. Cubbins, Chicago, Illinois, read a paper (by invitation) entitled "A Preliminary Report on the Use of Foreign Bodies in the Peritoneal Cavity," which was illustrated by numerous slides.

The paper was discussed by Drs. Crook, Gallagher, Barr, and in closing by the author of the paper.

Dr. C. E. Brush, Nashville, read a paper entitled "Hemoptysis and Hematemesis in Typhoid, with Report of a Case," which was discussed by Dr. Litterer.

Dr. S. T. Rucker, Memphis, followed with a paper on "Cardioneuroses." Discussed by Drs. Witt and Lequire.

On motion, the Society adjourned until 8:00 p. m.

First Day—Evening Session.

The Association reconvened at 8:00 p. m., and was called to order by the President.

Dr. W. W. Potter, Knoxville, read a paper on "Why Go to an Oculist for Refraction?" The paper was discussed by Drs. Dulaney, Williams, Jones, and Roberts.

Dr. C. P. McNabb moved that the Secretary send a telegram to Dr. W. K. Vance, Bristol, expressing sympathy in the death of his sister. Seconded and carried.

Dr. C. P. Fox, Greeneville, read a paper entitled "Who Should Operate? A Plea for More Careful Pre-operative Study of Surgical Cases," which was discussed by Drs. Haskins, Witherspoon, Sheddan, Roberts, Crockett, Zirkle, McNabb, and in closing by the essayist.

Dr. William D. Haggard, Nashville, read a paper entitled "Surgical Curiosities," which was illustrated by slides. Discussed by Dr. Barnett and in closing by the essayist.

Dr. L. L. Sheddan, Knoxville, read a paper entitled "The Significance and Management of Acute Abdominal Pain," which was discussed by Drs. Bryan, Witt, Williams, and in closing by the essayist.

On motion, the Association adjourned until 8:30 a. m. Wednesday.

April 5, 1916.

Second Day—Morning Session.

The Association met at 9:00 a. m., and was called to order by the President.

Dr. Perry Bromberg, Nashville, read a paper entitled "The Treatment of Syphilis," which was discussed by Drs. Williams, Sheddan, Haase, Barnett, Litterer, and in closing by the essayist.

Dr. F. P. Calhoun, of Atlanta, Ga., read a paper (by invitation) entitled "The Significance of Retinal Changes in Cardio-Renal-Vascular Disease."

On motion of Dr. Witherspoon, a vote of thanks was extended to Dr. Calhoun for his instructive and valuable paper.

Dr. G. P. Zirkle of Kingston read a paper entitled "The Prostatic Problem."

Dr. Eugene J. Johnson and Dr. J. A. Crisler, Memphis, read a joint paper entitled "A Plea for the Early Recognition and Treatment of Hyperthyroidism."

Dr. Martin H. Fischer, Cincinnati, O., (by invitation) delivered an address entitled "The Principles of Treatment in Nephritis."

At the conclusion of Dr. Fischer's remarks, Dr. Deering J. Roberts moved that a rising vote of thanks be extended to Dr. Fischer for his valuable, practical and most instructive paper. Seconded and unanimously carried.

On motion, the Association adjourned until 2:00 p. m.

Second Day—Afternoon Session.

The Association reconvened at 2:00 p. m., and was called to order by the Vice-President, Dr. Smith of Doyle.

Dr. W. C. Dixon, Nashville, read a paper on "Tuberculosis of the Kidney," which was discussed by Drs. Burch, Bromberg, Witt, and in closing by the essayist.

Dr. Herbert T. Brooks, Memphis, read a paper entitled "The Occurrence of Malignancy in the Gastrointestinal Tract." Discussed by Dr. Gallagher.

Dr. Willis C. Campbell, Memphis, read a paper entitled "The Solar Treatment of Tuberculosis in Bones and Joints." Discussed by Drs. Bryan, Nichol, Robertson, Brown, and in closing by the essayist.

On motion, the Association adjourned until 8:00 p. m.

Second Day—Evening Session.

The Association reconvened and was called to order by the President at 8:00 p. m.

Dr. W. M. McCabe, Nashville, read a paper on "Intestinal Obstruction," which was discussed by Drs. Tigert, Nash, Cowden, Haskell, Black, and in closing by the essayist.

Dr. L. E. Burch, Nashville, followed with a paper on "Menstrual Disorders."

This paper was discussed by Drs. McGehee, Black, and Panhorst.

On motion, the Association adjourned until 8:30 a. m., Thursday.

April 6, 1916—Third Day—Morning Session.

The Association met at 9:00 a. m., and was called to order by Vice-President Smith.

Dr. H. H. Shoulders, Nashville, read a paper entitled "The Public Health Situation in Tennessee Portrayed by Morality Records."

Discussed by Drs. White, Brown, Lequire, Haskell, Goetz, Brooks, Burns, Zoller, and in closing by the essayist.

Dr. L. W. Haskell moved that the Society request the President of the State Board of Health to have passed a sanitary regulation that all cases of typhoid fever shall be efficiently screened, either with wire or with a cheap mosquito netting, and that the excreta be sterilized by an efficient disinfectant; that there be a fine attached to the physician and a larger one to the family, and that this law be published broadcast.

Motion seconded and carried.

The Secretary read the report of the Nominating Committee of the House of Delegates. (For particulars see proceedings of the House of Delegates).

Dr. Newell and Dr. Black were appointed a committee to escort the newly elected President to the platform.

Dr. Ellett, in introducing his successor, said. Our orators all went home, so that we have no one left to introduce Dr. Cowden. However, Dr. Cowden does not need any introduction, especially from a man who is so much less known than he is to the profession of Tennessee, and I take great pleasure in presenting him with this badge of office (referring to gavel) and turn the Tennessee State Medical

Association over to him for next year. (Applause).

Dr. Cowden, in accepting the Presidency, said: Never before in my life did I want to be an orator as much as I do at this moment.

When I came here I was almost an humble private in the ranks of our beloved association and I suddenly find myself thrust in to the highest office within the gift of this organization. To me it will be the greatest honor that shall ever come my way. Read, if you will, the roster of this Association and upon its pages you will find the illustrious names of the men who have written the history of medicine and surgery in Tennessee and have made this organization the peer of any in this broad land of ours.

We are living in a great age in medicine and in surgery. We are struggling up from the doubts and misgivings of the past through the open door of the wonderful present on to the unlimited possibilities of the future, and it is no small task to lead a body of men like this, but it will be my pleasure and my privilege to lead you, if I can, to these higher ideals, to loftier purposes, and to the broader conceptions of our medical ethics.

If I told you how much I appreciate this great honor you would not believe me. This great honor that has been conferred upon me is enough to make anyone feel somewhat "chesty." But when I realize and remember the long list of illustrious men who have filled and shed lustre upon the presidential chair of this organization, my egotism has gone, and I feel like shrinking away in humility at my weakness in the presence of this stupendous task. I do not hope to fill it nearly as efficiently as my predecessor, but I say here and now, I pledge unto you every fiber of my being to the fulfillment of this high and honored trust. I thank you, gentlemen, more than I can tell you. (Loud applause.)

Dr. J. L. McGehee, Memphis, Vice-President for West Tennessee, was introduced, and said: Accept my thanks for the honor you have seen fit to confer upon me. As we are pressed for time and there are many of my friends from Memphis here who are on the program to read papers, I will not detain you by any speech of acceptance, but only to pledge you my efforts

in behalf of the State Association. (Applause).

There were several calls for the Secretary to make a speech. Dr. West said: Mr. Chairman and Gentlemen: We are behind with the program; there are several men who have valuable contributions to make, and I have only one or two things I want to say to the Association. First, I want to express my appreciation of the honor that has been shown me, and I pledge you my continued best efforts for the interest of this organization. I want to express my most sincere appreciation for the wonderful interest, the active interest, that has been taken in the affairs of the Association by the other officers during the past year. I have no hesitancy in saying that Ellett has made the best President we have ever had that I have known. (Applause.) I say that because he has taken more interest in every detail than any other president I have known to serve the Association.

I want to say a word about the gentleman you have chosen to serve you for the next year. He has been intensely interested and extremely conscientious and careful in the performance of the duties that have devolved him as treasurer in the past two years. And so I may say all down through the line as to the officers of the Association, and, for the most part, all the county secretaries, who are really the most important cogs in the wheel and have done good work.

There is one other thing I want to say to the men who told me that we could not have a good meeting in East Tennessee—I want to crook my fingers at them and say “I told you so.” Some suggested that a change be made from meeting in Knoxville to somewhere else because the Knoxville men could not do this thing up brown, but, gentlemen, I leave it to you if they have not done it. They have made this meeting a great success, and I want to thank them for it. (Applause).

Mr. President, there is nothing further that I can say of interest to the Association except to express my sincere appreciation of what has been done to help me as Secretary and the appreciation that I have for the attendance of men here today, who are coming to these meetings year by year and are taking more and more interest in the affairs of the Association.

We have the most representative body at this meeting we have ever had. They began to come a year or two ago and they are coming now every year. This is really the most encouraging feature and promises very much for the future of this organization. (Applause).

Dr. J. L. McGehee, Memphis, read a paper entitled “Tumors of the Female Breast,” which was discussed by Drs. Bryan, Rule, Black, Roberts, Burns, Tigert, Haskell.

Dr. B. F. Fyke, Springfield, read a paper on “Constipation,” which was discussed by Dr. Burns.

Dr. A. G. Nichol, Nashville, read a paper on “Treatment of Hip Disease,” which was discussed by Dr. C. A. Robertson, and in closing by the essayist.

Dr. W. F. Clary, Memphis, read a paper entitled, “Report of Two Gunshot Cases,” which was discussed by Drs. Burns, Cowden, Black, and in closing by the essayist.

At the conclusion of the discussion on Dr. Clary's paper Dr. C. A. Robertson, Ridgeway, said: I have a matter I want to bring before this Association that I deem of considerable importance, and that is in connection with the publication of the proceedings in the lay press. We are all aware of the fact that the lay press frequently get items from our proceedings that are garbled and inaccurate and often, perhaps, work great injustice upon physicians and organized medicine. Then, again, the lay press frequently fails to get, or, at least, fails to publish matters that are of the utmost importance as public health topics. Not infrequently things happen during our deliberations that are not well to give to the public. A case in point. Day before yesterday we had a discussion which assumed some rather unfortunate proportions, and if it had been published it might not have made us feel as comfortable as we usually like to feel.

Another illustration. I am told that in one of the leading daily papers of the state that there was about one-half column of publicity given to the manufacturers' proceedings and perhaps less than a dozen lines given to the association of this Society now in session. I believe, therefore, it would be a wise proceeding and sound in logic if we had a standing

committee appointed by the President, known as a committee on public press censorship, or a committee on the lay press, to give out such matter for publication as we think should be published and withhold those things that should not be published.

In this connection I am going to move, if I am in order, that the President be instructed to appoint a committee of three to have a censorship over publications in the lay press in the future, if I can have a second to that motion. Motion seconded.

Dr. William Britt Burns: I think this matter would have to go to the House of Delegates for consideration.

The President: The Chair rules that this matter will have to be brought up in the House of Delegates.

Dr. E. T. Newell, Chattanooga, read a paper entitled "The Treatment of Inoperable Carcinoma of the Uterus by the Percy Canterbury Method," which was discussed by Drs. Black and Haskell.

Dr. S. R. Miller, Knoxville, followed with a paper entitled "Hysteria Due to Alleged Traumatism," which was discussed by Drs. Crockett, Newell, Robertson, Haskell, Miller.

On motion, the Association adjourned until 2:00 p. m.

Third Day—Afternoon Session.

The Association re-convened at 2:00 p. m., and was called to order by the President.

Dr. Herbert Acuff, Knoxville, read a paper entitled "Prevention and Treatment of Shock."

Dr. W. T. Black, Memphis, read a paper entitled "Retro-Displacements of the Uterus; Report of Cases with Remarks Concerning the Type of Operation to Be Selected Under Certain Conditions, Especially the Barrett and Baldy-Webster Operations."

This paper was discussed by Drs. Clary, Caldwell and discussion closed by the essayist.

Dr. H. E. Goetz, Knoxville, read a paper on "Some Fallacies in the Accepted Treatment of Opiumism," which was discussed by Dr. Wallace, and in closing by the essayist.

Dr. C. A. Robertson, Ridgetop, read a paper entitled "The Etiology of Tuberculosis."

This paper was discussed by Drs. Haskell, Richmond, and in closing by the essayist.

Dr. L. W. Haskell, Memphis, read a paper entitled "Diagnosis of Acute Extra-Peritoneal Appendicitis."

Discussed by Drs. McGehee, Burns, Clary, and in closing by the essayist.

Dr. Olin West: I move that the best meeting the Tennessee State Medical Association ever held be now adjourned.

Dr. Deering J. Roberts, Nashville: In seconding that motion, I wish to express the views I have in regard to this meeting. I was asked the question by the Secretary as to what I thought of this meeting, and I fully agree with him that it is one of the best meetings we have ever had. It has been very interesting from beginning to end, characterized by a uniform-large attendance, a large number of papers having been read, followed by lucid, practical discussions. If anyone was called to order the President has not made a ruling that has been appealed from. The meeting has been harmonious throughout. It has been most satisfactory, and I say this from the standpoint of one who has had experience in many, many meetings.

Before closing I wish to express upon behalf of the visiting members of the Association our gratitude and sincere thanks to the Knox County Medical Society and its Committee of Arrangements, especially its Chairman, for their entertainment during this meeting, we being their guests. Our thanks are also due to the Elks' Club for the use of this building. Our thanks are also due to the President of the State University for his courteous invitation and entertainment there.

As the Association is to meet in Nashville next year, I can say to you that you will be heartily welcomed there with open arms and open hearts. We may not be able to entertain you as interestingly and perhaps as lavishly as they have done here at Knoxville, but we are going to do our best. We hope that when you come to Nashville next year you will expect a larger meeting there, as we receive business from both sides and in the middle of the state. Here you draw largely from your own end, some from the middle and some far west of the state.

This is the largest meeting we have ever had outside of Nashville. I am informed that three

hundred and twenty-one members have registered, the largest number we have had outside of the City of Nashville, which I understand last year was three hundred and forty-nine. (Applause.)

The President then put the motion and declared the Association adjourned to meet in Nashville in April, 1917.

TENNESSEE STATE MEDICAL ASSOCIATION.

Minutes of Section on Ophthalmology, Laryngology, Otology and Rhinology.

Chairman, Dr. C. G. Savage, Nashville; Secretary, Dr. O. Dulaney, Dyersburg.

Monday, April 3, 1916—Morning Session.

The Section met at 10:00 a. m., and was called to order by the Chairman, who delivered an address entitled "Routine in Eye Work."

The address was discussed by Drs. Dotson and Ellett.

Dr. Louis M. Scott, Jellico, read a paper on "Dacryocystitis as a Predisposing Cause of Corneal Ulcer," which was discussed by Drs. Jones (Knoxville), Jones (Maryland), Ellett, Price and Broyles.

Dr. A. F. Richards, Sparta, followed with a paper on "Trachoma," which was discussed by Drs. Davis, Ellett, Roberts, Price Potter, Savage, and the discussion closed by the essayist.

On motion, the Section adjourned until 2:00 p. m.

Afternoon Session.

The Section re-convened at 2:00 p. m., and was called to order by the Chairman.

Dr. Charles H. Davis, Knoxville, read a paper on "Intracapsular Cataract Extraction," which was discussed by Drs. Savage, Ellett, Price, and in closing by the essayist.

Dr. Emmett L. Jones, Cumberland, Maryland, read a paper by invitation entitled "Sub-Conjunctival Injections," which was discussed by Drs. Price, Dulaney, Capps, Davis, and in closing by the essayist.

Dr. Walter Dotson, Lebanon, read a paper on "Acute Middle Ear Trouble."

This paper was discussed by Drs. Ellett,

Dancy, Scott, Jones, Dulaney, Davis, Roberts, Savage, Davis, Roberts, and discussion closed by the essayist.

Dr. Broyles moved that a Nominating Committee of three be appointed to nominate officers of the Section for the ensuing year.

Seconded and carried.

The Chair appointed Drs. Broyles, Dancy and Richards.

The Nominating Committee subsequently submitted, through its Chairman, Dr. Broyles, the following report: Chairman, Dr. C. H. Davis, Knoxville; Vice-Chairman, Dr. Alexander B. Dancy, Jackson; Secretary, Dr. E. L. Roberts, Nashville.

It is suggested that this Section meet on the second day of the session of the annual meeting of the Association, with morning, afternoon and night sessions, if necessary, the first session to being at 9:00 a. m.

It was moved by Dr. Dulaney that the report be adopted as presented.

Seconded and carried.

Dr. Dulaney moved that the officers elected confer with the House of Delegates and see if an arrangement can be made to engage the services of a stenographer to report the Section proceedings.

Seconded and carried.

On motion, the Section adjourned until 8:00 p. m.

Evening Session.

The Section re-convened at 8:00 p. m., and was called to order by the Chairman.

Dr. Price moved a reconsideration of the action of fixing the time of beginning the first session of the Section.

Seconded and carried.

Dr. Roberts moved that the Section begin its work in the evening of the first day of the meeting of the Association, that is, on Tuesday, and continue until the program is finished.

Seconded and carried.

At this juncture, the retiring Chairman, Dr. Savage, thanked the members for the honor conferred upon him in having elected him Chairman of the Section.

Dr. Davis, in accepting the Chairmanship, thanked the members for the great honor they had conferred upon him, and said he would

endeavor to discharge the duties of the office to the best of his ability.

Dr. Edward L. Roberts, Nashville, then read a paper on "Tonsilleectomy, Indications and Technic."

Dr. W. Scott Farmer, Cookeville, followed with a paper on "Secondary Hemorrhage Following a Tonsil and Adenoid Operation, With Report of Case."

These two papers were discussed together by Drs. Dulaney, Potter, Ellett, Dotson, Broyles, Ford, Davis, and in closing by the authors of the papers.

Dr. Alexander B. Dancy, Jackson, read a paper on "Subperiosteal Abscess and Necrosis on the Antrum of Highmore, With Report of a Case," which was discussed by Dr. Cates.

It was moved that a vote of thanks be extended to Dr. Emmett L. Jones for coming to the meeting and contributing a valuable paper.

Seconded and carried.

It was moved that Dr. Jones be made an honorary member of the Section.

Seconded and carried.

On motion, a vote of thanks was extended to the local members who had done so much in contributing towards a very successful meeting of the Section.

On motion of Dr. Ellett, a vote of thanks was extended to the retiring officers.

Adjourned.

MINUTES OF THE HOUSE OF DELEGATES.

Tuesday Afternoon.

Presiding: Dr. E. C. Ellett.

Secretary: Dr. Olin West.

The Chairman: The House of Delegates will please come to order.

The Secretary: Gentlemen, I will call the list of the counties, and I wish each delegate would respond as I call his name, so that the stenographer may get the name of each delegate from each county:

Bedford, F. B. Reagor; Blount, J. J. McCulloch; Campbell, W. R. Irish; Coffee, J. H. Farrar, Jr.; Cumberland, E. W. Mitchell;

Davidson, H. M. Tigert, W. M. McCabe, W. C. Dixon; Dickson, H. G. Larkins; Dyer, O. Dulaney; Greene, J. C. Moore; Grundy, H. Lockhart; Hamblen, F. F. Painter; Hawkins, J. S. Lyons; Henderson, S. T. Parker; Jefferson, G. D. Lequire; Knox, L. L. Sheddian, H. H. McCampbell, J. M. Troutt; Lincoln, E. K. Blair; Loudon, W. O. Brickell; Madison, J. L. Crook, A. B. Dancey; Maury, M. A. Beasley; Monroe, B. W. Bagwell; McMinn, J. R. Nankivell; Putnam, W. A. Howard and W. S. Zirkle; Robertson, B. F. Fyke; Shelby, W. T. Farmer; Rhea, J. R. Gillespie; Roane, G. P. BMLack, W. F. Cleary, Marcus Haase; Washington, E. T. West, C. J. Broyles; White, W. J. Breeding, A. F. Richards, R. E. L. Smith; Wilson, B. S. Rhea.

The President: The next order of business is the reading of the minutes of the last meeting.

The Secretary: The minutes of the last meeting were published in the Journal and it would take a mighty long time to read them. The usual procedure has been to dispense with the reading of the minutes.

Dr. Broyles: I move that we dispense with the reading of the minutes until later and then read them over from the Journal if there is no objection.

The President: Inasmuch as they have already been published in the Journal, let that action be taken, and all in favor of same will make it known by saying "aye."

(Carried.)

The President: The next order of business is the ratifying of charters of county societies.

The Secretary: Charters have been issued to four new societies: Coffee, Decatur, Hawkins and Wayne. The constitution provides that these charters shall be issued by the House of Delegates, and the usual proceeding has been to send them to the county societies and have the action ratified, and I hope that some one will move that the Secretary be authorized to issue charters to these county societies.

Dr. Dulaney: I move that the Secretary be so authorized. (Seconded.)

The Chairman: It has been moved and seconded that charters be ratified for Coffee, Decatur, Hawkins and Wayne counties; all in

favor of that motion signify it by saying "aye."

(Carried.)

The President: The motion prevails.

The President: Gentlemen, before we go any farther into the business, there are just a few matters I want to call your attention to. It is not usual for the President to make a formal address to the House of Delegates, but I think it would be well to call attention to some things which appear to need special consideration, and which will not come up in the regular course of business, and with that idea in mind, I offer the following suggestions:

"(1) This Association should have an object, definitely expressed and definitely striven for, aside from the usual scientific purposes of a medical association;

"(2) We ought to have a voice in the appointment of the State Board of Health, the State Board of Medical Examiners, and the medical heads of State Institutions. Through the county societies we ought to have a voice in the appointment of county and city boards of health and their heads, jail physicians, school and other inspectors, and all other medical appointments;

"(3) Our Committee on Medical Legislation should hold office for two years and report to the House of Delegates such legislation as they contemplate introducing;

"(4) We should have a representative at the meeting of the legislature to keep the members of the society informed, by bulletin or otherwise, of pending legislation affecting public health and the medical profession."

I would be glad to entertain a motion for a committee to be appointed to think this over and report to the House of Delegates such recommendations as they see fit in regard to this suggestion.

Dr. Broyles: I move the appointment of a committee of three, one from each grand division of the state, to see that the plans here suggested by the President are duly considered. (Seconded.)

The Chairman: You have heard the motion. Is there any discussion? If not, all in favor of the motion will make it known by saying "aye."

(Carried.)

The Chairman: I will appoint Dr. C. J. Broyles, Dr. W. T. Black and Dr. G. C. Savage.

Dr. Savage: I leave this meeting this evening.

The Chairman: I will ask Dr. Perry Bromberg if he will represent Middle Tennessee on that committee?

Gentlemen, just let me read you a clause from the State Constitution: "On the first day of the annual session, the delegates from each of the three grand divisions shall select three delegates from their respective divisions to serve as a Committee on Nominations, no two of whom shall be from the same county. It shall be the duty of this committee to consult with the members of the Association and to hold one or more meetings, at which the best interests of the Association and the profession of the state for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of President and one member for each of the other offices to be filled at that annual session."

The most expeditious way of arriving at that would be to call a five or ten-minute recess, and let the delegates from each of the grand divisions of the state get together and decide on three members from each grand division to comprise this Nominating Committee. The House of Delegates stands at ease for five minutes.

(After a recess of five minutes, the House of Delegates reconvened.)

The Chairman: We will hear from East Tennessee in regard to their nominations.

Dr. S. R. Miller: Dr. C. J. Broyles, Dr. Leon Sheddan, Dr. B. W. Bagwell.

The Chairman: We will hear from Middle Tennessee.

Dr. J. F. Gallagher: Dr. H. M. Tigert, Dr. Scott Farmer, and Dr. F. B. Reagor.

The Chairman: We will hear from West Tennessee.

Dr. J. L. Crook: Dr. W. B. Burns, Dr. A. B. Dancey, Dr. S. T. Parker.

The Chairman: That constitutes the Nominating Committee, I believe, from my under-

standing of the reading of that section from the constitution of what their duties are.

A Member: Read that again, the duties, please.

The Chairman: "It shall be the duty of this committee to consult with the members of the Association and to hold one or more meetings, at which the best interests of the Association and of the profession of the state for the ensuing year shall be carefully considered. The committee shall report the result of its deliberations to the House of Delegates in the shape of a ticket containing the names of three members for the office of President and one for each of the other offices to be filled at that annual session."

The Chairman: The next order of business is the report of the Secretary.

The Secretary: Mr. President and Gentlemen: I have this report, but it isn't as long as it looks, because a good deal of it is tabulated matter and that will not have to be read

REPORT OF SECRETARY.

April 4, 1916.

To the House of Delegates:

The report here submitted by your Secretary is intended to cover the year from April 1, 1915, to April 1, 1916, except in the matter of membership of the Tennessee State Medical Association, which is reported upon from January 1, 1915, to December 31 of that year. The fiscal year of the Association is supposed to end with December 31, but, through long established precedent, members are allowed until April 1 of each year to pay current dues and be enrolled. For this reason, the reports of former secretaries have been made to include such matters as have transpired during the time from one annual meeting to the next.

Fourteen hundred and fifty-two names have been reported through County Secretaries for enrollment for the year 1915. This number exceeds by eight the 1914 enrollment, which was the largest in the history of the Association. Membership dues have not been paid for nine of the members so reported, however, the checks which were ostensibly sent for this purpose by the Secretary of the County Society to which these gentlemen belonged having been refused payment by the bank upon which they were drawn. These nine names were retained on the mailing list of the Journal for the reason that membership dues were said to have been paid by the members into the hands of their local secretary. This particular county has not reported for 1916. If the nine names referred to are left out of the

count, the 1915 membership was less by one member than that of 1914.

The following table will show the gain or loss in actual numbers of members in 1915 as compared with 1914, and the number of members reported from each county up to April 1, 1916, for this year.

County	1914	1915	To April 1, 1916
Anderson -----	9	13	11
Bedford -----	20	22	22
Blount -----	8	3	6
Campbell -----	18	14	23
Carroll -----	20	24	22
Chester -----	11	12	8
Cocke -----	2	0	0
Coffee—Not organized.			8
Crockett -----	9	13	**
Cumberland -----	5	5	6
Davidson -----	152	154	125
Decatur -----	--	--	6
Dickson -----	0	10	11
Dyer -----	22	28	29
Fayette -----	20	20	14
Franklin -----	19	8	11
Gibson -----	25	27	28
Giles -----	32	25	25
Greene -----	29	27	25
Grundy -----	8	8	8
Hamblen -----	16	14	15
Hamilton -----	94	107	75
Hardeman -----	13	13	14
Hawkins—Not organized.			8
Haywood -----	14	9	7
Henderson -----	27	26	26
Henry -----	9	8	14
Hickman -----	5	8	7
Jackson -----	13	13	13
Jefferson -----	17	18	14
Knox -----	98	111	111
Lake -----	11	8	8
Lauderdale -----	24	22	25
Lincoln -----	25	24	25
Loudon -----	11	11	9
Macon -----	10	8	7
Madison -----	32	29	27
Marshall -----	21	22	23
Maury -----	25	26	33
Monroe -----	8	10	11
Montgomery -----	13	10	13
Morgan -----	0	6	0
McMinn -----	15	15	12
McNairy -----	16	21	15
Obion -----	19	16	7
Overton -----	6	10	8
Polk -----	9	8	10
Putnam -----	15	21	10
Rhea -----	13	6	8
Roane -----	15	15	16
Robertson -----	14	23	18
Rutherford -----	24	22	23
Scott -----	8	0	8
Sevier -----	4	5	8
Shelby -----	196	181	111
Smith -----	17	17	14
Sullivan-Carter-Johnson -----	15	37	37
Sumner -----	15	13	***
Stewart -----	10	1	0
Tipton -----	29	20	11
Unicoi -----	9	--	0
Warren -----	9	9	5
Washington -----	20	30	27
Wayne—Not organized.			6

Weakley -----	22	18	7
White -----	17	15	13
Williamson -----	14	14	15
Wilson -----	14	12	11
Total -----	1445	1452	1274

**Not reported.

***Not reported.

While the figures here given show the actual gain or loss in numbers as enrolled, they do not show the loss of members occasioned by men holding membership one year and neglecting to continue such membership the next. For instance, Anderson County reported 9 members in 1914 and 13 in 1915, but two names on the 1914 roll were wanting from the 1915 membership list. Campbell County showed a loss of membership in 1915 of 4, but six names on the 1914 roll do not appear in 1915. In other words, new members were enrolled in 1915, but all 1914 members were not held.

Blount and Stewart counties did not have enough members in 1915 to man a society, and Morgan County has failed so far in 1916 to muster enough members to justify keeping this county on the list of organized counties. The Unicoi County society seems to have died.

Scott County made no report for 1915, but it gives me great pleasure to report that this county and Blount have reorganized for 1916 and have reported for the year.

It is with peculiar pleasure that your Secretary reports the organization of new societies in Coffee, Decatur, Hawkins, and Wayne counties, all of these having been organized this year.

Your Secretary has been advised that societies have been organized in Bradley, Hardin, Lawrence, and Stewart counties, but has received no official notification to this effect.

There are, therefore, sixty-six counties in which societies are maintained, on paper, at least, while twenty-eight counties are unorganized, Carter, Johnson and Sullivan together maintaining one organization. Thirty counties have no medical organization.

Twenty-two East Tennessee counties are organized; twenty-six Middle Tennessee counties have county medical societies; eighteen West Tennessee counties are organized.

Your Secretary is not kept informed as to removals and deaths of members except as he is able to gather such information from newspapers and from occasional reports of County Secretaries. According to our information in hand, eight members have died since the last annual meeting.

Personal checks have been sent to the Secretary from one individual in each of several unorganized counties with requests that the senders should have their names enrolled as members of the State Medical Association. These checks have been returned and the gentlemen sending them have been advised that they should affiliate with societies in counties adjacent to those of their residence.

One of the serious obstacles in the way of building up a stronger permanent organization in Tennessee is to be found in the tendency of a large number of men to neglect from pure carelessness the payment of current dues. Yet another rather large class seem to be altogether indifferent to the welfare of medical organization and keep alive their membership or let it die according to circumstances and according to the persistence or lack of persistence exhibited by their respective County Secretaries in pursuing them. Others seem to covet membership in their county and state societies only because such affiliation enables them to be members of other medical organizations outside the state or confers upon them privileges which may be exercised to secure benefits which would not be open to them if their lack of interest and almost absolute lack of loyalty to their local and state societies were properly taken into consideration. One who has constant opportunity for observation of the facts in the case has constantly in his mind three questions: (1) What is the matter with our county societies? (2) What is the matter with our state organization? (3) What is the matter with Tennessee doctors eligible to membership in these societies? Your Secretary, after many months of hard work succeeding years of hard work of the same sort by other men who preceded him in office, begs to advise you, in all humility and with all due deference, that there are things the matter with our doctors, our county societies and our state association. The societies do not offer to members what they need and want. They do not offer what is needed and what is wanted because members will not provide it and it cannot be had otherwise. This vicious circle is broken in a few county societies which are really active in carrying out the purposes of organization.

The income of this Association is derived from membership fees, from the sale of advertising space in the columns of the Journal, and from subscriptions to the Journal. This last named source of revenue is nearly insignificant, yielding only a few dollars.

Expenditures are for printing the Journal, mailing and illustrations for the Journal, commissions on advertising secured, office rent, telephone and telegraph service, office equipment and supplies, salary of the Treasurer, salary of stenographer, expenses of delegates to the meetings of the American Medical Association, for employing official stenographers to report the proceedings of the scientific sessions of the Association and of the House of Delegates, expenses of committees, salary of Secretary, and incidentals which come up in the course of any business.

The necessary fixed monthly expenditures are approximately as follows:

Printing Journal -----	\$200 00
Mailing and local delivery of Journal -----	9 00
Illustrations -----	3 00

Office rent	18 09
Office equipment and expense, including stationery, postage, telephone and telegraph service, and office incidentals.....	20 00
Salary of Treasurer	8 33
Salary of stenographer	60 00
Expenses of delegates to A. M. A.....	8 33
Expenses of annual meeting	20 00
Salary of Secretary	83 33
Total monthly expenditures	\$429 99

In addition to the fixed monthly expenditures above given, others are necessary to the prosecution of the business of the Association, as, for instance, commissions on advertising, expenses of committees, etc., which vary to an extent which makes it impossible to strike an average of monthly division, and there must be minor incidental expenses from time to time which cannot be foreseen.

The total income of the Association during the year from April 1, 1915, to April 1, 1916, from advertising, subscriptions, etc., has been \$2,585.23, and the total income from dues has been \$3,589.50, leaving a balance which will be made known to you through the report of your Treasurer. In the judgment of your Secretary, the income of the Association is inadequate to the demands which may with reason be made upon it. If any increase of activity upon the part of the Association is to take place, the income must be correspondingly increased. The salary of the Secretary, increased last year over his protest, is larger than is justified if any wider field of service is to be entered by the organization, or if any improvement of moment is to be made upon the conduct of present undertakings. There should always be a safe balance in bank to the credit of the Treasurer in order that a working capital may be in hand. Under our present income, this balance is not always in hand.

The advertising income of any periodical with a circulation no larger than that enjoyed by the Journal is always insecure, and it is beyond the bounds of possibility for the Secretary-Editor to find time for the work necessary to increase or even to maintain the present volume of advertising. If the members of the Association would make a very slight effort to help, the advertising patronage of the Journal would be easily made secure and could easily be increased in amount. If members would simply buy what they must have from those who advertise in the Journal, and let the advertisers know about it, the income from this source would be made safer and larger in amount.

The income from membership dues should be larger than it now is, but your Secretary, it seems, is unable to bring about any increase worth while.

The Journal is just what it is because it is the best your Editor has been able to make it with such assistance as he has been able to command and after the expenditure of an enormous amount of labor, time, thought, prayer, and energy. It will not

be much better until more liberality is shown by the many capable men we have in the way of scientific papers, until more prompt, accurate and full reports are received from some county secretaries, and more news and notes of general interest are sent in, or until such time as the making of the Journal is given over to more able hands than those which have worked their best for it during the last two years.

Most grateful acknowledgment is here made of many helpful kindnesses shown the Secretary during the year by all of the officers of the Association and many of the individual members. The unflinching courtesy and valuable co-operation extended by secretaries of the various county societies have been more gratefully received and more deeply appreciated than words can tell.

Miss Miller, stenographer and Assistant to the Secretary, has been faithful and careful in the discharge of her duties and to her is due both praise and gratitude, which is here given with sincere pleasure.

The following statements show the monies which have been transmitted through the Secretary to the Treasurer of the Association and the amounts contributed to the fund for the prosecution of certain illegal practitioners of medicine. No expenditures of money belonging to the Association are made by the Secretary except upon check of the Treasurer made to him for specific purposes which are fully set out in the report of the Treasurer. All funds coming into the office of the Secretary are immediately given over to the Treasurer and his receipt taken therefor, and then are immediately deposited in the bank to the credit of the Treasurer.

TABLE I.

ADVERTISING CASH—1915.

April

1 City View Sanitarium	\$ 5 00
1 Tulane Operating Company	4 00
1 Wiles Bros. & Co.	4 00
1 Broughton's Sanitarium	2 92
2 Weder Manufacturing Co.	10 00
5 Dr. Katherine L. Storm	2 50
5 City View Sanitarium	2 50
7 Southern Ice Co.	10 00
7 Womack-Waldrum Drug Co.	8 00
7 Theo. Tafel Co.	5 00
8 Dr. A. Well (subscription)	2 00
9 Parke, Davis & Co.	7 13
9 Jensen, Herzer & Jeck	4 00
9 E. R. Squibb & Sons	2 77
9 W. C. Raesfield	1 50
10 Nashville Distilling Co.	4 00
12 Phillips-Trawick Co.	4 00
12 Co-operative Med. Adv. Bureau	39 29
12 Abbott Alkaloidal Co.	5 42
15 The Oxford Retreat	2 50
15 Diehl & Lord	11 00
15 Dorris, Karsch & Co.	29 97
15 H. K. Mulford & Co.	9 50
15 Lederle Antitoxin Laboratories	15 00
16 Maxwell Operating Co.	4 00
16 Southern Star Laundry	3 92
16 The University of Tennessee	15 00
16 F. A. Hardy & Co.	5 00

17	Fairchild Bros. & Foster	15 00	17	Woman's Hospital	5 42
20	Hermitage Hotel	8 00	21	H. K. Mulford Co.	9 50
21	Armour & Co.	8 33	21	The Abbott Alkaloidal Co.	5 42
21	Massengale Adv. Co.	5 15	21	Massengale Advertising Agency	5 15
21	Winter Auto Livery Co.	12 00	23	Nashville Surgical Supply Co.	47 52
21	Theo. Tafel & Co.	15 00	25	Theo. Tafel Co.	5 00
22	Woman's Hospital	5 42	26	Cincinnati Sanitarium	5 00
23	Battle Creek Sanitarium	-----		Total	\$241 66
	Check from Dr. W. T. Foute	32 80		July	
23	Fairchild Bros. & Foster	15 00	2	Southern Ice Co.	\$ 10 00
23	Nurses' Registry	10 00	3	City View Sanitarium	5 00
24	Southern Ice Co.	10 00	5	Dr. Broughton's Sanitarium	2 92
26	Cincinnati Sanitarium	5 00	7	Dr. Katherine L. Storm	2 50
27	Dr. H. B. Goetz (adv. in one issue)	5 00	8	New Orleans Polyclinic	15 00
	Total	\$366 62	9	Oxford Retreat	2 50
May			9	E. R. Squibb & Sons	2 77
1	Cheek-Neal Coffee Co.	\$ 3 00	10	Parke, Davis & Co.	7 13
3	Dr. Broughton's Sanitarium	2 92	12	Co-operative Med. Adv. Bureau	39 59
3	Wiles Bros. & Co.	4 00	12	Drs. Lewis & Blue	4 00
3	A. N. Eshman	4 00	13	Southern Star Laundry	4 00
3	Lynnhurst Sanitarium	7 50	14	Ambrose Printing Co.	6 66
5	Robert Lyle	8 00	14	Armour & Co.	8 33
5	Tulane Operating Co.	4 00	15	Carter-Hough Tent & Awning Co.	12 00
6	Theo. Tafel Co.	5 00	19	Woman's Hospital	5 42
7	E. R. Squibb & Sons	2 77	24	Nashville Baking Co.	11 64
7	T. F. Long (advertisement)	1 00	24	Fairchild Bros. & Foster	7 50
7	Dr. Katherine L. Storm	2 50	24	Fairchild Bros. & Foster	7 50
10	Paul & John Stumb	12 00	24	Lynnhurst Sanitarium	10 00
10	Drs. Lewis & Blue	4 00	24	Cincinnati Sanitarium	5 00
10	Drs. Petty & Wallace	7 50	28	Southern Ice Co.	10 00
10	Parke, Davis & Co.	7 13	28	Geo. S. Johnston & Co.	64 98
11	Ambrose Printing Co.	1 97		Total	\$244 44
11	Skalowski's	4 00		August	
12	Co-operative Med. Adv. Bureau	36 75	2	C. V. Mosby Co. (exhibit space)	\$ 12 50
12	Castner-Knott Dry Goods Co.	6 50	2	Drs. Petty & Wallace	7 50
12	Nashville Buick Co.	12 00	3	Dr. Broughton's Sanitarium	2 92
13	Diehl & Lord	7 50	5	P. G. Tucker-Vulcan Coil Co.	4 00
13	Deeds, Jordan Buggy Co.	15 00	6	Parke, Davis & Co.	7 13
15	H. K. Mulford Co.	9 50	6	Katherine L. Storm	2 50
19	Newsun Tire & Rubber Co.	8 00	9	E. R. Squibb & Sons	2 77
19	The Abbott Alkaloidal Co.	5 42	10	Ambrose Printing Co.	3 33
20	Hermitage Hotel	4 00	11	H. K. Mulford Co.	9 50
20	Oxford Retreat	2 50	11	Theo. Tafel Co.	10 00
20	Southern Ice Co.	10 00	11	Co-operative Med. Adv. Bureau	47 20
21	Jensen, Herzer & Jeck	4 00	16	Woman's Hospital	5 42
21	Armour & Co.	8 33	16	Abbott Alkaloidal Co.	5 42
21	L. & N. Railway Co.	13 00	16	Armour & Co.	7 00
25	Woman's Hospital	5 42	17	F. A. Hardy & Co.	10 00
25	Maxwell House	4 00	23	Southern Ice Co.	10 00
26	Fairchild Bros. & Foster	7 50	24	Oxford Retreat	2 50
26	Cincinnati Sanitarium	5 00	25	Cincinnati Sanitarium	5 00
29	Dr. S. M. Miller, copies of May Journal	7 00	28	Fairchild Bros. & Foster	7 50
29	Vulcan Coil Co.	15 00		Total	\$162 19
	Total	\$267 71		September	
June			1	City View Sanitarium	\$ 10 00
2	Nashville Distilling Co.	\$ 4 00	3	Dr. Broughton's Sanitarium	2 92
3	Dr. Broughton's Sanitarium	2 92	3	The Eat Shop	4 00
3	Sarah James Hospital	7 50	3	Calhoun & Co.	12 00
4	City View Sanitarium	10 00	3	Tolmle's	12 00
4	Dr. T. O. Burger (subscription)	2 00	3	Dr. Jesse A. Sanders (card space)	5 00
7	Dr. Katherine L. Storm	2 50	4	Dr. T. O. Burger (card space)	5 00
7	Armour & Co.	8 33	4	Dr. Katherine L. Storm	2 50
7	E. R. Squibb & Sons	2 77	4	E. R. Squibb & Sons	2 77
9	Dr. B. S. Wert (Journals)	1 56	9	Woman's Hospital	5 42
10	Phillips-Trawick Co.	4 00	9	Drs. Lewis & Blue	4 00
11	Joseph Millinery	8 00	10	Abbott Alkaloidal Co.	5 42
11	Parke, Davis & Co.	7 13	13	Co-operative Med. Adv. Bureau	47 96
11	Co-operative Med. Adv. Bureau	45 94	13	Armour & Co.	7 00
12	Vanderbilt University	30 00	13	Oxford Retreat	2 50
14	Oxford Retreat	2 50	13	Fairchild Bros. & Foster	7 50
15	Dr. S. M. Miller (May Journals)	1 50	13	Strand Theatre	8 00
16	Southern Star Laundry	8 00	14	W. G. Hirsig Co.	12 00
16	F. A. Hardy & Co.	10 00			

15	H. K. Mulford Co.	9 50
15	Parke, Davis & Co.	7 13
25	Cincinnati Sanitarium	5 00
Total		\$177 62

October

4	City View Sanitarium	\$ 5 00
6	Dr. Broughton's Sanitarium	2 92
7	E. R. Squibb & Sons	2 77
9	Dr. Katherine L. Storm	2 50
9	Theo. Tafel Co.	10 00
9	Carter-Hough Tent & Awning Co.	8 00
12	Ambrose Printing Co	6 66
12	Southern Ice Co.	10 00
12	Co-operative Med. Adv. Bureau	46 88
13	H. K. Mulford Co.	9 50
13	Parke, Davis & Co.	7 13
14	Lynnhurst Sanitarium	15 00
16	Woman's Hospital	5 42
16	Fairchild Bros. & Foster	7 50
16	Oxford Retreat	2 50
18	F. A. Hardy & Co.	10 00
18	Armour & Co.	7 00
18	Abbott Alkaloidal Co.	5 42
23	Harry J. Frahn	4 00
26	Cincinnati Sanitarium	5 00
28	Southern Ice Co.	10 00
Total		\$183 20

November

2	Theo. Tafel Co.	\$ 5 00
3	Drs. Petty & Wallace	7 50
4	Oxford Retreat	2 50
4	Dr. Broughton's Sanitarium	2 92
6	E. R. Squibb & Sons	2 77
8	Dr. Katherine L. Storm	2 50
8	Parke, Davis & Co.	7 13
8	Armour & Co.	7 00
10	Ambrose Printing Co.	3 33
11	Drs. Lewis & Blue	4 00
11	Co-operative Med. Adv. Bureau	63 35
15	Woman's Hospital	5 42
18	F. A. Hardy & Co.	5 00
18	H. K. Mulford Co.	9 50
27	The Cincinnati Sanitarium	5 00
29	Fairchild Bros. & Foster	7 50
30	Southern Ice Co.	10 00
Total		\$150 42

December

2	Dr. Broughton's Sanitarium	\$ 2 92
6	E. R. Squibb & Sons	2 77
9	Parke, Davis & Co.	7 13
11	Dr. Katherine L. Storm	2 50
11	Oxford Retreat	2 50
14	Armour & Co.	7 00
14	Co-operative Med. Adv. Bureau	61 00
14	Theo. Tafel Co.	5 00
14	Ambrose Printing Co	3 33
16	Fairchild Bros. & Foster	7 50
17	F. A. Hardy & Co.	5 00
18	Woman's Hospital	5 42
20	H. K. Mulford Co.	9 50
31	Cincinnati Sanitarium	5 00
Total		\$126 57

January

3	Southern Ice Co.	\$ 10 00
3	Geo. S. Johnston Co.	32 49
5	City View Sanitarium	15 00
6	Dr. A. B. Cooke (card space)	5 00
6	Dr. Broughton's Sanitarium	2 92
8	J. Blair Cross (subscription)	2 00
10	Dr. Katherine L. Storm	2 50
10	Ambrose Printing Co.	3 33

11	Drs. Lewis & Blue	4 00
11	Co-operative Med. Adv. Bureau	56 59
12	Parke, Davis & Co.	7 13
14	E. R. Squibb & Sons	2 78
14	Woman's Hospital	5 42
14	Fairchild Bros. & Foster	7 50
18	H. K. Mulford Co.	9 50
18	Armour & Co.	7 00
20	Lynnhurst Sanitarium	15 00
21	Oxford Retreat	2 50
21	F. A. Hardy & Co.	5 00
22	Southern Ice Co.	10 00
25	Cincinnati Sanitarium	5 00
26	Theo. Tafel Co.	5 00
26	Orchard Springs Sanitarium	15 00
Total		\$230 66

February

2	Drs. Petty & Wallace	\$ 7 50
6	City View Sanitarium	5 00
7	Dr. Katherine L. Storm	2 50
8	Oxford Retreat	2 50
9	Armour & Co.	7 00
9	Co-operative Med. Adv. Bureau	63 86
16	F. A. Hardy & Co.	5 00
19	H. K. Mulford & Co.	9 50
19	Woman's Hospital	5 42
25	Southern Ice Co.	10 00
25	Cincinnati Sanitarium	5 00
Total		\$123 28

March

1	Fairchild Bros. & Foster	\$ 7 50
2	City View Sanitarium	7 50
3	Vulcan Coil Co.	16 00
4	Theo. Tafel Co.	10 00
6	Dr. Broughton's Sanitarium	2 92
8	E. R. Squibb & Sons (Jan. & Feb. Adv.)	5 55
9	Co-operative Med. Adv. Bureau	64 18
10	Ambrose Printing Co.	3 33
13	Woman's Hospital	5 42
13	Dr. Katherine L. Storm	2 50
13	Parke, Davis & Co.	14 25
13	Armour & Co.	7 00
14	Oxford Retreat	2 50
14	Geo. S. Johnston Co.	32 49
16	F. A. Hardy Co.	5 00
20	H. K. Mulford Co.	9 50
20	Nashville Surgical Supply Co.	48 78
22	One year's subscription—Dr. Dovey	2 00
24	Cincinnati Sanitarium	5 00
27	Fairchild Bros. & Foster	7 50
30	Southern Ice Co.	10 00
31	Carter-Hough Tent & Awning Co.	4 00
31	Rich Printing Co.	37 94

Total	\$310 86
Grand total	\$2,585 23

TABLE II.

MEMBERSHIP CASH—1915.

April

1	Dr. W. G. Saunders, Secretary of Madison County	\$ 32 00
1	Dr. F. B. Reagor, Secretary of Bedford County	4 00
1	Dr. E. W. Mabry, Secretary of Jackson County (\$3.00 Medical Defense)	9 00
1	Dr. J. W. Rogers, Secretary of Sevier County	10 00
1	Dr. H. H. McCampbell, Secretary of Knox County	42 00
1	Dr. J. R. Nankivell, Secretary of McMinn County	4 00

1	Dr. J. W. Cox, Secretary of Washington County (\$10.00 Medical Defense) ----	56 00	17	Dr. B. M. Tittsworth, Secretary Jefferson County (\$2.00 Medical Defense) --	8 00
5	Dr. J. L. Andrews, Secretary of Shelby County (\$2.00 Medical Defense) -----	10 00		Total -----	\$632 00
5	Dr. H. H. McCampbell, Secretary of Knox County -----	4 00	April.		
5	Dr. W. W. Hill, Secretary of Roane County -----	2 00	20	Dr. B. C. Dodds, Secretary Carroll County (\$1.00 Medical Defense) -----	5 00
5	Dr. H. G. Edmonson, Secretary of Weakley County, (\$1.00 Medical Defense) -----	7 00	21	Dr. W. W. Walker, Secretary Dickson County (Medical Defense) -----	2 00
6	Dr. H. H. McCampbell, Secretary of Knox County -----	6 00	22	Dr. J. L. Andrews, Secretary Shelby County -----	2 00
6	Dr. W. C. Bilbro, for 37 members 1913, check made to Dr. Cowden -----	114 00	27	Dr. Jno. B. Haskins, Secretary Hamilton County -----	10 00
6	Dr. Jno. B. Haskins, Secretary Hamilton County -----	16 00		Total -----	\$ 19 00
6	Dr. E. S. Hopper, Secretary of Crockett County -----	6 00	May		
7	Dr. DeWitt Smith, Secretary of Gibson County -----	2 00	3	Dr. E. C. Freeman, Secretary of Giles County -----	\$ 2 00
8	Dr. T. A. Patrick, Secretary of Lincoln County -----	6 00	4	Dr. O. Dulaney, Secretary of Dyer County (\$1.00 Medical Defense) ----	3 00
8	Dr. B. M. Little, Secretary of Montgomery County -----	6 00	5	Dr. W. E. Gallion, Secretary of Morgan County -----	2 00
8	Dr. H. H. McCampbell, Secretary of Knox County -----	18 00	7	Dr. J. F. Gallagher, Secretary of Davidson County -----	8 00
9	Dr. E. E. Northcutt, Secretary of Warren County -----	2 00	7	Dr. Jno. Morris, Secretary Fayette County -----	2 00
9	Dr. F. A. McClintock, Secretary of Campbell County -----	2 00	7	Dr. B. C. Dodds, Secretary Carroll County -----	2 00
9	Dr. Jno. W. Morris, Secretary of Fayette County -----	2 00	8	Dr. B. C. Dodds, Secretary Carroll County (\$1.00 Medical Defense) ----	3 00
9	Dr. E. C. Freeman, Secretary of Giles County -----	4 00	11	Dr. T. J. Hickman, Secretary Loudon County -----	6 00
9	Dr. J. L. Andrews, Secretary of Shelby County (\$7.00 Medical Defense) -----	19 00	11	Dr. Jno. B. Haskins, Secretary Hamilton County -----	4 00
9	Dr. J. L. Andrews, Secretary of Shelby County -----	20 00	14	Dr. B. M. Tittsworth, Secretary Jefferson County (\$1.00 Medical Defense) --	3 00
9	Dr. Jno. B. Haskins, Secretary of Hamilton County -----	2 00	17	Dr. O. Dulaney, Secretary Dyer County	4 00
10	Dr. Samuel Parker, Secretary Henderson County -----	2 00	19	Dr. T. G. Jackson, Secretary McNairy County -----	2 00
10	Dr. B. S. Rhea, Secretary Wilson County -----	2 00	19	Dr. J. A. Dulaney, Secretary Sullivan County -----	10 00
10	Dr. J. L. Andrews, Secretary Shelby County (\$5.00 Medical Defense) -----	21 00	22	Dr. T. G. Jackson, Secretary McNairy County (\$2.00 Indian doctor) -----	6 00
12	Dr. F. W. Watson, Secretary of Obion County (\$7.00 Medical Defense) -----	37 00	24	Dr. R. W. Tate, Secretary Hardeman County -----	2 00
12	Dr. W. E. Gallion, Secretary Morgan County -----	2 00	25	Dr. Jno. B. Haskins, Secretary Hamilton County -----	2 00
12	Dr. Jno. Morris, Secretary of Fayette County -----	2 00	25	Dr. W. W. Hill, Secretary Roane County	2 00
12	Dr. H. H. McCampbell, Secretary Knox County -----	6 00	25	Dr. J. H. McSwain, Secretary Henry County -----	2 00
12	Dr. O. Dulaney, Secretary Dyer County	40 00	28	Dr. E. E. Northcutt, Secretary Warren County -----	2 00
12	Dr. C. P. Martin, Secretary Putnam County (\$1.00 Medical Defense) -----	3 00	29	Dr. H. H. McCampbell, Secretary Knox County -----	6 00
15	Dr. J. L. Andrews, Secretary Shelby County (\$4.00 Medical Defense) -----	16 00	29	Dr. T. J. Hickman, Secretary Loudon County -----	2 00
15	Dr. C. W. Inge, Secretary Franklin County (\$5.00 Medical Defense) -----	19 00	29	Dr. E. S. Hopper, Secretary Crockett County -----	2 00
15	Dr. C. A. Abernathy, Secretary Giles County -----	2 00	31	Dr. Jno. B. Haskins, Secretary Hamilton County -----	2 00
15	Dr. M. A. Blanton, Secretary Greene County -----	54 00	31	Dr. DeWitt Smith, Secretary Gibson County -----	2 00
15	J. Y. Freeman, Secretary Macon County -----	2 00	31	Dr. F. B. Reagor, Secretary Bedford County (check to Dr. C.) -----	2 00
16	Dr. C. W. Inge, Secretary Franklin County -----	2 00		Total -----	\$ 83 00
16	Dr. L. A. Yarbrough, Secretary of Tipton County (\$1.00 Medical Defense) --	7 00	June		
17	Dr. T. J. Hickman, Secretary of Loudon County -----	2 00	4	Dr. W. A. Sams, Unicoi County (\$9.00 Medical Defense—protested) --	\$ 27 00
			4	Dr. J. L. Edwards, Haywood County (\$1.00 Medical Defense) -----	3 00
			10	Dr. B. J. High, Smith County -----	2 00
			11	Dr. W. A. Sams, Unicoi County (In lieu of check of June 4. Check protested and fee of \$2.75 added) -----	29 75

11	Dr. Jno. B. Haskins, Hamilton County	2 00
12	Dr. Jno. Morris, Fayette County	2 00
14	Dr. F. A. McClintock, Campbell County	2 00
14	Dr. J. F. Gallagher, Davidson County	12 00
14	Dr. B. C. Dodds, Carroll County	2 00
15	Dr. Jno. B. Haskins, Hamilton County	2 00
16	Dr. P. D. Biddle, Maury County	8 00
17	Dr. H. G. Edmonson, Weakley County	4 00
18	Dr. W. A. Sams, Unicoi County (for protest fee and check of error)	32 50
11	Check returned to bank.	
19	Dr. H. G. Edmonson, Weakley County (\$1.00 Medical Defense)	3 00
21	Dr. B. J. High, Smith County	2 00
21	Dr. B. N. White, Rutherford County	2 00
21	Dr. B. N. Tittsworth, Jefferson County	2 00
24	Dr. E. W. Mabry, Jackson County (\$1.00 Medical Defense)	3 00
25	Dr. J. L. Andrews, Shelby County (\$2.00 for 1914 dues)	12 00
28	Dr. J. R. Nankivell, McMinn County	2 00
30	Dr. C. P. Martin, Putnam County	2 00
Total		\$156 25

July		
2	Dr. H. H. McCampbell, Knox County	\$ 2 00
8	Dr. J. B. LaHiff, Stewart County (\$1.00 Medical Defense)	3 00
10	Dr. Jno. B. Haskins, Hamilton County	16 00
14	Dr. DeWitt Smith, Gibson County	2 00
17	Dr. T. G. Jackson, McNairy County (\$3.75 for Indian doctor)	5 75
24	Dr. B. C. Dodds, Carroll County	2 00
24	Dr. F. B. Reagor, Bedford County	2 00
24	Dr. B. J. High, Smith County	2 00
Total		\$ 34 75

August		
3	Dr. J. F. Gallagher, Davidson County	\$ 10 00
5	Dr. Jno. W. Cox, Washington County (\$2.00 Medical Defense)	6 00
7	Dr. J. A. McCulloch, (Dr. Lovingood)	2 00
16	Dr. S. G. Parker, Henderson County	2 00
17	Dr. A. F. Richards, White County	2 00
25	Dr. J. L. Andrews, Shelby County	4 00
27	Dr. E. S. Hopper, Crockett County	2 00
Total		\$ 28 00

September		
2	Dr. J. A. Dulaney, Sullivan County	\$ 6 00
2	Dr. W. G. Saunders, Madison County	2 00
9	Drs. Lewis and Blue, Shelby County (Medical Defense)	2 00
15	Dr. B. N. White, Rutherford County	2 00
18	Dr. F. B. Reagor, Bedford County	4 00
20	Dr. J. L. Andrews, Shelby County	4 00
Total		\$ 20 00

October		
7	Dr. J. L. Gallagher, Davidson County	\$ 14 00
13	Dr. J. B. Haskins, Hamilton County	8 00
18	Dr. F. W. Watson, Obion County, (J. D. Carlton)	2 00
19	Dr. J. L. Andrews, Shelby County	2 00
19	Dr. J. L. Andrews, Shelby County (\$2.00 Medical Defense)	16 00
20	Dr. J. B. Haskins, Hamilton County	2 00
20	Dr. O. Dulaney, Dyer County (\$1.00 Medical Defense)	5 00
22	Dr. Jno. Morris, Fayette County	2 00
23	Dr. Jno. Morris, Fayette County	2 00
25	Dr. J. A. Delaney, Sullivan County	8 00
28	Dr. J. B. Haskins, Hamilton County	4 00
28	Dr. J. L. Andrews, Shelby County	4 00
Total		\$ 69 00

November

1	Dr. F. A. McClintock, Campbell County	\$ 2 00
2	Dr. J. W. Cox, Washington County	4 00
2	Dr. J. W. Cox, Washington County	2 00
4	Dr. Jno. Morris, Fayette County	4 00
6	Dr. E. C. Freeman, Giles County	2 00
6	Dr. J. W. Cox, Washington County (\$1.00 Medical Defense)	5 00
10	Dr. J. L. Andrews, Shelby County	6 00
12	Dr. H. H. McCampbell, Knox County	2 00
12	Dr. J. A. Delaney, Sullivan County	8 00
12	Dr. J. B. Haskins, Hamilton County	6 00
16	Dr. J. A. Delaney, Sullivan County	10 00
16	Dr. J. F. Gallagher, Davidson County	8 00
18	Dr. B. N. White, Rutherford County	2 00
23	Dr. J. T. Hayes, Anderson County	2 00
Total		\$ 63 00

MEMBERSHIP CASE—1915.

SECRETARIES.

December

8	Dr. E. C. Freeman, Giles County	\$ 2 00
9	Dr. J. F. Gallagher, Davidson County	2 00
11	Dr. W. K. Edwards, Hickman County	2 00
20	Dr. J. B. Haskins, Hamilton County	2 00
23	Dr. J. L. Andrews, Shelby County	4 00
31	Dr. H. H. McCampbell, Knox County	4 00
31	Dr. J. F. Gallagher, Davidson County	2 00
Total		\$18 00

December, 1915.

18	Dr. B. N. Tittsworth, Jefferson County (\$13.00 Medical Defense)	\$ 39 00
23	Dr. J. L. Andrews, Shelby County	2 00
24	Dr. A. F. Richards, White County	28 00
31	Dr. U. G. Jones, Anderson County	12 00
31	Dr. T. M. Roberts, Monroe County, (\$9.00 Medical Defense)	27 00

January, 1916.

4	Dr. B. J. High, Smith County	28 00
4	Dr. Dewitt Smith, Gibson County, (\$1.00 Medical Defense)	3 00
7	Dr. B. M. Tittsworth, Jefferson County, (\$1.00 Medical Defense)	3 00
7	Dr. W. K. Vance, Sullivan County	40 00
7	Dr. B. F. Fyke, Robertson County	26 00
8	Dr. T. M. Roberts, Monroe County (\$1.00 Medical Defense)	3 00
8	Dr. Hy Lockhart, Grundy County, (\$27.00 Medical Defense)	27 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. W. Likely Simpson, Shelby County	24 00
10	Dr. W. Likely Simpson, Shelby County	18 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. W. Likely Simpson, Shelby County	20 00
10	Dr. G. F. Aycock, Davidson County	186 00
12	Dr. J. Y. Freeman, Macon County (\$4.00 Medical Defense)	18 00
12	Dr. T. J. Hickman, Loudon County, (\$1.00 Medical Defense)	9 00
14	Dr. J. L. Edwards, Haywood County	14 00
14	Dr. F. M. Boyatt, Scott County (\$4.00 Medical Defense)	12 00
15	Dr. W. G. Saunders, Madison County	10 00
18	Dr. B. T. Bennet, Gibson County (1915 dues, \$2.00)	16 00
18	Dr. F. M. Boyatt, Scott County (\$2.00 Medical Defense)	6 00
18	Dr. G. F. Aycock, Davidson County	14 00
19	Dr. E. C. Freeman, Giles County	28 00

20	Dr. B. M. Little, Montgomery County (\$7.00 Medical Defense) -----	25 00	19	(\$3.00 Medical Defense) -----	9 00
20	Dr. W. Likely Simpson, Shelby County	14 00	19	Dr. B. S. Rhea, Wilson County (\$4.00 Medical Defense) -----	22 00
20	Dr. J. D. Alexander, Lake County..	16 00	19	Dr. J. W. Sanford, Lauderdale County (\$2.00 Medical Defense) -----	48 00
22	Dr. F. M. Boyatt, Scott County (\$2.00 Medical Defense) -----	6 00	19	Dr. K. S. Howlett, Williamson County (\$5.00 Medical Defense) -----	27 00
22	Dr. W. T. Bell, McNairy County (\$5.00 Medical Defense) -----	15 00	19	Dr. T. J. Hickman, Loudon County..	2 00
22	Dr. W. P. Allen, Rhea County (\$1.00 Medical Defense) -----	3 00	19	Dr. T. J. Hickman, Loudon County..	2 00
24	Dr. A. B. Qualls, Overton County----	16 00	19	Dr. E. C. Freeman, Giles County----	14 00
24	Dr. H. P. Larimore, Hamilton County (\$4.00, 1915 dues) -----	64 00	19	Dr. B. F. Fyke, Robertson County--	4 00
25	Dr. B. M. Little, Montgomery County	2 00	19	Dr. W. K. Edwards, Hickman County	14 00
26	Dr. H. H. McCampbell, Knox County	94 00	19	Dr. G. F. Aycock, Davidson County (\$2.00, 1915 dues) -----	30 00
26	Dr. E. W. Mabry, Jackson County (\$4.00 Medical Defense) -----	14 00	21	Dr. W. T. Bell, McNairy County----	3 00
26	Dr. B. M. Little, Montgomery County (1915 dues, \$2.00) -----	2 00	22	Dr. W. G. Saunders, Madison County	4 00
27	Dr. M. A. Beasley, Maury County (\$1.00 Medical Defense) -----	31 00	22	Dr. E. W. Mabry, Jackson County (\$1.00 Medical Defense) -----	3 00
27	Dr. W. G. Saunders, Madison County	12 00	22	Dr. E. W. Mabry, Jackson County (\$1.00 Medical Defense) -----	3 00
28	Dr. C. T. Carroll, Hamblen County (\$14.00 Medical Defense) -----	42 00	23	Dr. S. T. Parker, Henderson County (\$3.00 Medical Defense) -----	51 00
28	Dr. B. F. Fyke, Robertson County--	2 00	24	Dr. W. G. Saunders, Madison County	2 00
29	Dr. W. R. Irish, Campbell County----	26 00	24	Dr. J. W. Sanford, Lauderdale County	2 00
31	Dr. C. T. Carroll, Hamblen County (\$1.00 Medical Defense) -----	3 00	25	Dr. Jno. Morris, Fayette County (\$1.00 Medical Defense) -----	3 00
	Total -----	\$1,120 00	25	Dr. Jno. Morris, Fayette County----	2 00
			28	Dr. LeRoy Wilkins, Dyer County (\$2.00 Medical Defense) -----	6 00
				Total -----	\$ 615 00

February

1	Dr. W. T. Bell, Secretary McNairy County, (\$1.00 Medical Defense) ----	5 00
2	Dr. W. R. Irish, Secretary Campbell County -----	2 00
2	Dr. W. G. Saunders, Secretary Madison County -----	2 00
3	Dr. H. K. McCampbell, Secretary Knox County -----	22 00
4	Dr. T. J. Hickman, Secretary Loudon County -----	2 00
4	Dr. W. Likely Simpson, Shelby County	6 00
5	Dr. W. K. Vance, Secretary Sullivan County (\$1.00 Medical Defense) ----	11 00
5	Dr. E. LeRoy Wilkins, Dyer County (\$15.00 Medical Defense) -----	59 00
7	Dr. H. P. Larimore, Hamilton County	20 00
7	Dr. G. C. Givan, Roane County (\$4.00 Medical Defense) -----	28 00
8	Dr. W. T. Bell, McNairy County----	4 00
8	Dr. T. M. Roberts, Monroe County (\$1.00 Medical Defense) -----	3 00
9	Dr. H. Claude Guerin, Dickson County (\$2.00 Medical Defense) -----	14 00
9	Dr. B. M. Little, Montgomery County (\$1.00 Medical Defense) -----	7 00
9	Dr. W. T. Bell, McNairy County (\$1.00 Medical Defense) -----	3 00
9	Dr. U. G. Jones, Anderson County--	10 00
10	Dr. W. C. Brown, Chester County--	8 00
11	Dr. E. E. Northcutt, Warren County (\$2.00 Medical Defense) -----	12 00
11	Dr. W. G. Saunders, Madison County	6 00
11	Dr. B. C. Dodds, Carroll County----	24 00
14	Dr. C. P. Martin, Putnam County (\$7.00 Medical Defense) -----	21 00
14	Dr. M. A. Beasley, Maury County (1915, \$2.00 dues and \$1.00 Medical Defense) -----	19 00
14	Dr. J. S. Lyons, Hawkins County----	16 00
19	Dr. Chas. Griffith, Coffee County (\$4.00 Medical Defense) -----	18 00
19	Dr. F. B. Reagor, Bedford County--	42 00
19	Dr. E. W. Mabry, Jackson County	

March

2	Dr. W. W. Hill, Roane County (\$1.00 Medical Defense) -----	\$ 7 00
2	Dr. W. R. Irish, Campbell County----	10 00
2	Dr. E. W. Mabry, Jackson County (\$1.00 Medical Defense) -----	3 00
6	Dr. H. P. Larimore, Hamilton County--	12 00
7	Dr. T. A. Patrick, Lincoln County----	50 00
7	Dr. J. H. McSwain, Henry County (\$3.00 Medical Defense) -----	31 00
8	Dr. John Morris, Fayette County (\$1.00 Medical Defense) -----	3 00
8	Dr. John Morris, Fayette County (\$2.00 (1915 dues) -----	6 00
8	Dr. H. H. McCampbell, Knox County--	48 00
8	Dr. J. W. Rogers, Sevier County----	16 00
9	Dr. T. J. Hickman, Loudon County----	2 00
9	Dr. S. T. Hardison, Marshall County (\$12.00 Medical Defense) -----	58 00
10	Dr. W. T. Bell, McNairy County (\$1.00 Medical Defense) -----	3 00
10	Dr. W. Likely Simpson, Shelby County	18 00
11	Dr. T. J. Hickman, Loudon County----	2 00
11	Dr. W. P. Allen, Rhea County (\$7.00 Medical Defense) -----	21 00
11	Dr. M. A. Beasley, Maury County----	10 00
13	Dr. M. E. Rust, Fayette County----	10 00
14	Dr. Ed Culp, Wayne County -----	10 00
14	Dr. W. K. Vance, Sullivan County----	18 00
15	Dr. E. W. Cocke, Hardeman County----	26 00
15	Dr. M. E. Rust, Fayette County----	6 00
15	Dr. M. A. Blanton, Greene County (\$3.00 Medical Defense) -----	47 00
16	Dr. S. T. Parker, Henderson County (\$1.00 Medical Defense) -----	5 00
16	Dr. H. Claude Guerin, Dickson County ((1.00 Medical Defense) -----	7 00
17	Dr. W. T. Bell, McNairy County (\$3.00 Medical Defense) -----	9 00
17	Dr. J. D. Carlton, Obion County ----	12 00
17	Dr. W. C. Brown, Chester County----	2 00
17	Dr. K. S. Howlett, Williamson County (\$2 00 Medical Defense) -----	8 00
18	Dr. W. G. Saunders, Madison County--	18 00

18	Dr. G. F. Aycock, Davidson County--	14 00
18	Dr. B. T. Bennett, Gibson County (\$19.00 Medical Defense) -----	71 00
18	Dr. K. S. Howlett, Williamson County	2 00
20	Dr. H. P. Larimore, Hamilton County (\$2.00, 1915 dues) -----	38 00
20	Dr. M. A. Beasley, Maury County-----	2 00
20	Dr. T. E. Sawyer, Weakley County (\$7.00 Medical Defense) -----	21 00
20	Dr. B. M. Little, Montgomery County (\$1.00 Medical Defense) -----	3 00
21	Dr. W. K. Vance, Sullivan County----	4 00
22	Dr. J. W. Sanford, Lauderdale County	2 00
22	Dr. J. D. Carlton, Obion County-----	2 00
23	Dr. J. L. Edwards, Haywood County----	4 00
23	Dr. W. R. Irish, Campbell County-----	2 00
23	Dr. W. W. Hill, Roane County (\$1.00 Medical Defense) -----	3 00
23	Dr. J. W. Cox, Washington County (\$15.00 Medical Defense) -----	75 00
23	Dr. H. H. McCampbell, Knox County--	40 00
24	Dr. V. L. Lewis, Cumberland County----	12 00
24	Dr. G. F. Aycock, Davidson County----	6 00
25	Dr. M. A. Beasley, Maury County-----	2 00
25	Dr. B. S. Rhea, Wilson County (\$1.00 Medical Defense) -----	5 00
25	Dr. E. C. Freeman, Giles County-----	8 00
25	Dr. H. Claude Guerin, Dickson County	4 00
27	Dr. R. C. Gaw, Jackson County (\$2.00 Medical Defense) -----	6 00
27	Dr. E. LeRoy Wilkins, Dyer County (\$4.00 Medical Defense) -----	14 00
27	Dr. W. C. Brown, Chester County-----	2 00
27	Dr. H. H. McCampbell, Knox County--	16 00
20	Dr. F. B. Reagor, Bedford County-----	2 00
Total -----		\$838 00

March

28	Dr. L. J. Lindsay, Tipton County (\$10 Medical Defense) -----	32 00
28	Dr. L. E. Ragsdale, Maury County (dues for himself) -----	2 00
28	Dr. W. K. Vance, Sullivan County----	2 00
28	Dr. W. R. Irish, Campbell County-----	6 00
28	Dr. C. P. Martin, Putnam County (\$3.00 Medical Defense) -----	9 00
29	Dr. Edwin W. Coker, Hardeman County	2 00
29	Dr. Jno. T. Grisard, Franklin County	20 00
30	Dr. H. H. McCampbell, Knox County--	2 00
31	Dr. Jno. P. Grisard, Franklin County--	2 00
31	Dr. H. P. Larimore, Hamilton County (\$4.00, 1913 and 1914 dues) -----	24 00
31	Dr. M. A. Beasley, Maury County-----	4 00
31	Dr. W. C. Brown, Chester County-----	4 00
31	Dr. B. C. Dodds, Carroll County-----	20 00
31	Dr. Ed Culp, Wayne County -----	2 00
31	Dr. J. Nankivell, McMinn County-----	24 00
31	Dr. E. H. Jones, Rutherford County (\$5.00 Medical Defense) -----	51 00
31	Dr. J. M. Crider, Decatur County-----	12 00
31	Dr. M. A. Blanton, Greene County-----	2 00
31	Dr. M. A. Blanton, Greene County-----	2 00
31	Dr. C. F. Crowder, Blount County-----	12 00
Total -----		\$236 00
Grand total -----		\$3932 00
Less error account item \$32.50 Unicoi County -----		\$ 32 50

Total -----		\$3899 50
Total Medical Defense -----		\$ 325 00
Total dues for membership (1913)-----		2 00
Total dues for membership (1914)-----		4 00
Total dues for membership (1915)-----		16 00
Advertising, subscriptions, etc. -----		2585 23

Membership dues -----	3899 50
Total -----	\$6484 73

TABLE III.

FUND FOR PROSECUTION OF ILLEGAL PRACTITIONERS.

Contributor	Amount Contributed
W. H. Witt -----	\$ 5 00
W. C. Dixon -----	2 00
E. W. Mitchell -----	1 00
H. D. McGill -----	2 00
William Litterer -----	10 00
E. B. Cayce -----	5 00
N. C. Steele -----	1 00
A. G. Castleman -----	1 00
W. M. Wright -----	1 00
W. M. McCabe -----	2 00
W. D. Haggard -----	10 00
G. W. Oliver -----	1 00
Joseph McGahey -----	1 00
J. P. Grisard -----	1 00
J. G. Eblen -----	4 00
B. M. Tittsworth -----	1 00
J. W. Brandau -----	5 00
W. P. Robinson -----	1 00
M. L. Hughes -----	1 00
J. T. Barbee -----	2 00
S. M. Miller -----	5 00
E. C. Ellett -----	5 00
E. F. Platkin -----	1 00
E. F. Peden -----	1 00
F. B. Reagor -----	1 00
J. S. Dye -----	10 00
G. C. Grimes -----	1 00
L. D. Cotten -----	1 00
J. R. Gillespie -----	5 00
White County Medical Society, F. Richards, Secretary -----	6 00
J. F. Love -----	1 00
S. D. Acuff -----	1 00
M. M. Copenhaver -----	3 00
McNairy County Medical Society -----	2 00
McNairy County Medical Society, T. G. Jack- son, Secretary -----	3 75
O. S. McCown -----	1 93
Thomas W. Jones -----	1 00
R. S. Perry -----	1 00
Robertson County Medical Society, B. F. Fyke, Secretary -----	10 00
J. E. Taylor -----	1 00
J. N. Smith -----	1 00
C. E. Bolen -----	1 00
E. M. Holder -----	1 00
S. R. Miller -----	10 00
Bedford County Medical Society, F. B. Reagor, Secretary -----	3 00
Monroe County Medical Society, W. H. Ar- rants, Secretary -----	10 00
Greene County Medical Society, M. A. Blan- ton, Secretary -----	7 00
W. M. Breeding -----	1 00
J. D. Capps -----	1 00
L. A. Ledford -----	1 00
J. T. McDonald -----	1 00
A. B. Qualls -----	1 00
E. D. Newell -----	5 00
Perry Bromberg -----	5 00
Carroll County Medical Society, B. C. Dodds, Secretary -----	5 00
Grundy County Medical Society, H. Lockhart, hart, Secretary -----	4 00
Hamilton County Medical Society -----	34 00
Wilson County Medical Society, B. S. Rhea, Secretary -----	7 00

Drs. Yearwood, Holland, Cannon, Graham, Goodrich, Cullum, Shelton, Noblitt, Pat- rick, Sloan, and McWilliams, of Lincoln County Medical Society -----	10 00
Kelley Smythe -----	2 50
Hamblen County Medical Society, C. T. Car- roll, Secretary -----	7 00
Olin West -----	5 00
K. C. Coppenhaver -----	1 00
Total -----	\$242 18

DISBURSEMENTS.

June 7, 1915, Secretary's check to G. P. Zirkle, Roane County -----	\$100 00
August 18, 1915, Secretary's check to B. H. Littleton, on order of G. P. Zirkle, Roane County -----	50 00
September 9, 1915, Hamilton County Medical Society to G. P. Zirkle, Roane County--	34 00
March 28, 1916, Secretary's check to G. P. Zirkle, Roane County -----	50 00
Total -----	\$234 00
Amount contributed -----	\$242 18
Interest -----	40
Amount disbursed -----	234 00

Balance in bank ----- \$ 8 58

Respectfully submitted,
OLIN WEST, Secretary.

The Secretary: I would like to ask, Mr. President, that a committee be appointed to audit the fund subscribed by members of the Association for the purpose of prosecuting illegal practitioners, since that fund was handled strictly by the Secretary and not by the Treasurer.

Dr. Crook: Mr. President, I move that that report be adopted and be spread on the records, and that the Secretary be thanked for his efficient services.

(Motion seconded and carried.)

The President: In regard to the committee to audit a portion of that, without objection, I will include that in the work of the committee that will be appointed to audit the Treasurer's report.

The next order of business is the Report of the Treasurer.

Dr. Cowden: Mr. President, I will ask that my report be deferred until tomorrow. I have the detailed statement already made out and I would like to have it investigated before another meeting of your body.

A Member: I move that the Treasurer's request be granted.

The Chairman: Without objection, we will not hear that until the Auditing Committee have looked it over. I don't suppose it is necessary for a motion to be put. It is almost a part of the regular proceedings.

Dr. Savage: The report cannot be referred to an Auditing Committee until it has been read. This body should hear the report and then it should be referred to the Auditing Committee. We cannot refer what we do not hear.

The Treasurer: Mr. Chairman, I understood that the committee audited it before. I am not prepared to read it at present.

The Chairman: We will pass this then for the present. I did not know that the "watch-dog" was on the job. I thought I would get by with a little thing of that sort. I will defer the appointment of that committee until after the reading of the report and, without objection, both the reports of the Secretary and Treasurer will be referred to the same committee.

The next order of business is reports of standing committees. The first committee called is the Committee on Public Policy and Legislation. Dr. George Price is Chairman of that committee.

The Chairman of this committee was not present.

Dr. Savage: Dr. DeLoach is a member of that committee.

The Chairman: Dr. Price is Chairman of that committee and we will have to defer hearing his report until he comes in. If there are other members of that committee present, unless some of them have a report, we will hear the report from Dr. Zirkle.

The Chairman: While waiting on that, we will go on with the next of the standing committees.

The Committee on Memoirs: Dr. N. F. Raines is the Chairman of that committee.

(Dr. Raines doesn't respond.)

The Chairman: Dr. Raines does not appear to be present. Is there any member of that committee present who can make the report.

Dr. D. J. Roberts: As a member of that committee, will say that I saw Dr. Raines about a month ago and he gave me the names of some members whom he had heard had died, and asked me if I had the names of any who had died within the last twelve months, and I knew of none. I referred the matter to the Secretary to put in the record. I knew

of none other than those he had given me. I suppose Dr. Raines will have in time his report ready to be transmitted to the Secretary for publication, and I move that the report be referred to the Secretary when it comes up.

The Chairman: If there is no report that will be the only way to handle the matter.

Dr. Zirkle: We adjourned to meet again before our report is read.

The Chairman: We will just pass it for another time. Dr. McCabe, does that agree with your conception of the matter.

Dr. McCabe: I believe that was understood.

The Secretary: In the matter of the report of the Committee on Memoirs, I have sent to Dr. Raines the names of eight gentlemen, as far as I know, who have died during the year. If there are any others than these, I wish you would please give them to me or to Dr. Raines.

Secretary reads: J. W. Gresham, M. F. Clemmons, J. T. Jones, G. M. Burdette, J. J. Howell, S. M. Miller, L. B. Walton, A. G. Sinclair, R. F. Baker.

The Secretary: If there are any others, I would be glad to have them.

Dr. Richardson: Dr. R. F. Baker of White county was a member of the Association.

The Secretary: I beg your pardon; I didn't have his name, Doctor.

Dr. Roberts: In connection with that, I would suggest that the delegates present be requested to communicate with the Secretary of each county society giving him the names of any members who die, so that the secretary of each county society will learn of the death of any member at once, and he in turn report to the Chairman of the Committee on Memoirs or to the Secretary of the Association, the names and dates of the death of members. We ought to look after this at the particular time when it occurs. By that means, the Secretary of the Association and the Chairman on Memoirs will have the report by the time the annual meeting comes around.

A Member: I suggest also that when that report goes in that the newspaper clipping of the report of his death and the funeral service would be of interest in detailing the life of the man, and I suggest that the clipping be included.

The Chairman: Is there a second to this motion?

A Member: I second the motion.

The Chairman: We will consider that as an amendment to your motion, Dr. Roberts.

Dr. Roberts: Yes.

The Chairman: You have heard the request that the secretaries of the county societies report to the Chairman on Memoirs the death of members and at the same time supply any newspaper notices. Is there any discussion? If not, all in favor of the same will make it known by saying "aye."

(Carried.)

The Chairman: The next committee is the Committee on Tuberculosis. Dr. Larkin Smith, is he present?

A Member: No, sir.

The Chairman: Dr. Richmond McKinney? (No response.)

The Chairman: Dr. H. Lockhart?

Dr. Lockhart: I suppose I am the only member of that committee present. So far as making the report is concerned, I have none to make. I wrote Dr. Smith and asked him if there was anything being done or could be done along that line. I have never received any reply from him, and all the report I have received is the notification of my appointment by the Secretary.

The Chairman: The next committee is the Committee on Scientific Work. That is practically the Program Committee. Dr. West is Chairman.

Dr. West: The time for the special order of the general session has arrived. I am ready to make the report of the Committee on Scientific Work, but inasmuch as the hour for adjournment has come, and the hour for the special order in the other hall has arrived, I suspect that we would better adjourn.

Dr. Savage: The paper is still being read by the Doctor in the next hall.

Dr. West: Mr. President, the report of the Committee on Scientific Work is shown in the program which you all have before you. This program is composed of the papers read before the Section on Eye, Ear, Nose and Throat, secured by Dr. Dulaney, Secretary of that section. The rest of the program was compiled according to the usual procedure. The

responses to the letters asking for papers were few and far between, but the responses from men who wrote upon their own initiative have been very generous, and the result is that we have a program which we think is a pretty fair piece of work. Aside from that, I have no report to make for the committee, except that I have received as Chairman of the committee the thoughtful and earnest co-operation of the President and the other two members of the Program Committee, Drs. Battle Malone and E. T. Newell.

Dr. Roberts: We received this morning from the President of the State University a very cordial invitation to visit that institution. That institution belongs to the state, and is the head of education in the state of Tennessee, an institution having reached the age of one hundred and twenty years, dating back in our memorial past.

I, therefore, move the House of Delegates that the invitation be accepted and that as many members as can visit that institution tomorrow (Wednesday), between the hours of five and seven o'clock P. M. Let as many as can be there; take a little trouble upon yourselves and visit the State University.

The President: You have heard the motion.

Dr. McCabe: From five to seven is pretty late; suppose we make it from four to six P. M. I don't want to interfere, but think this is a more convenient time.

The Chairman: You have heard the motion amended that we accept the invitation of the President of the State University to visit the university between the hours of four and six. Do you accept that amendment, Doctor?

Dr. Roberts: That is all right.

The Chairman: You have heard the motion and amendment that we accept the invitation of the President of the State University to visit the university. All in favor of that motion will signify it by saying "aye."

(Carried.)

The Chairman: Let the Secretary be authorized to notify the President of the university to that effect.

Dr. Roberts: And let also the same announcement be made in the other hall.

The Chairman: The report of the Commit-

tee on Scientific Work was not disposed of. What is your pleasure in regard to that?

A Member: I move that the report be accepted.

The Chairman: The Committee on Scientific Work automatically expires with this meeting, so that it is not necessary to consider whether we will continue it or discharge it. All in favor of that motion make it known by saying "aye."

Carried.

The Chairman: The next order of business is the report of the Committee on Medical Defense. We have only three or four minutes to devote to it, and I doubt whether we will be able to complete it in our limited time.

Dr. Savage: The paper in the other hall has been read.

The Chairman: I would suggest that we adjourn.

Dr. Reagor: There is one point in the Secretary's report that I would like to lay a great deal of stress on, and that is with reference to the advertisers who advertise in our Journal. It is our Journal and I believe that we ought to patronize the people who advertise in it, buy our instruments and books from them, from those who patronize us. A representative of a concern who doesn't advertise in the Journal came to my office to sell me some instruments. I told him I believed I would patronize the concerns advertising in our Journal. Then he became very indignant. I suggest that we help one another, that we help those who help our Journal. I just want to impress this matter upon the members present to see that advertisers who use our Journal are patronized by us.

The Chairman: The suggestion is timely and I hope it will be acted on.

It was moved and seconded that the meeting adjourn until 8 o'clock Wednesday morning, April 5th, 1916.

Wednesday Morning, April 5th, 1916.

The House of Delegates met pursuant to adjournment at 8 o'clock A. M.

The Chairman: The House of Delegates will please come to order. The first order of business is the report of the Committee on Medical Defense. Dr. S. R. Miller is Chair-

man of that committee. Just a moment; we passed the report of the Treasurer on yesterday, and I think we had better have that the first thing.

The Secretary: I have not the report here.

The Chairman: Then I will have to beg your pardon again; so we will go on with the report of the Committee on Medical Defense.

Dr. S. R. Miller: (Reading report)

Mr. President and Members of the House of Delegates.

Your Committee on Medical Defense begs to make this their second report of this department of the Association's work. Our last report, including April 10, 1915, showed that 604 members had paid the Medical Defense assessment. In the calendar year 1915, 680 members paid their fees. On April 3, this year, 610 members have paid. These figures are set forth in detail in "Exhibit A."

In the year 1915, three units were referred to this committee. One from Campbell County for alleged mal-practice in treating a compound fractured leg. Upon investigation it was found that the member did not pay the assessment fee until about thirty days after the alleged mal-practice. The second suit was referred from Shelby County by a member who had been sued jointly with a druggist for an error or omission in a prescription. Our attorney took charge of the suit, but it was compromised for a nominal sum, our member paying a very small part of the compromise and the druggist paying the remainder. Your committee paid our attorney's fee only. The third suit was from Shelby County and was referred to our general counsel who, after careful consideration, pronounced the case one of alleged unlawful restraint and assault, and not a case of malpractice, and your committee so notified the defendants.

Thus far in 1916 one suit has come from Shelby County for alleged mal-practice in treating a fractured leg. The member is sued jointly with the plaintiff's employer. There appears to be no mal-practice in this case and our attorney will no doubt secure a verdict in our member's favor. One threatened suit has been referred from Knox County, but upon investigation it was found that this member had not paid his defense fee until more than thirty

days after the alleged mal-practice, and the member was so notified. Another suit from Shelby County is threatened, but our attorney's investigation in this case has not been completed.

The receipts from the committee thus far have been \$1,290 and the expenditures \$420.74, as shown by the report of the Treasurer of the committee. The current expense since January 1 is not yet due and is unpaid. Balance, \$869.26.

Other suits may be filed during the remaining nine months of this year against the account of the year 1915. Your committee feels that the work has been organized on a conservative and sound business basis and will prove more popular when it is better understood by all members. The six hundred and ten members who have paid their fee are the cream of the profession in the state and the united efforts of this number will have an influence that will benefit all members.

S. R. MILLER, Chairman;

J. L. CROOK, Treasurer;

H. M. TIGERT,

Committee.

After reading that matter relating to the first malpractice suit, interposed the following remarks:

Dr. Miller: I will say here that the Doctor wrote me afterwards that it looked like a very small thing that the State Association, of which he had been a member for a long while, could not afford to bear the expense of this suit when he had been a member so long, just because he had failed to send in, or overlooked, as he put it, sending in his Medical Defense fee. I wrote the Doctor and told him if we didn't pursue this plan that no member would take out insurance until a suit was threatened or brought, and then they would take out a policy and have it dated back one month or a year or five years in order to secure this protection. By pursuing this plan of paying his dollar when due, then we could undertake to take up things of this kind for the members. If we don't do this, instead of less than half of our membership paying, we wouldn't have but about five, and not over ten per cent paying this fee, if he could go back and get this protection.

(Dr. Miller here finishes the reading of report.)

The Chairman: You have heard the report of the Committee on Medical Defense. What is your pleasure in regard to it?

Dr. Sheddan: I move that the report be accepted.

The Chairman: It has been moved that the report be accepted. What disposition shall be made of the committee?

Dr. Burns: I move that the report be printed promptly in the Journal.

The Chairman: I expect that the appointment of that committee would rest on—Mr. Secretary, is that a regular standing committee?

The Secretary: Mr. President, this committee can be changed if the House of Delegates so chooses, and it is with them; but if I may be allowed to suggest, without going into any extended commendation of the work of the committee—which is deserved—I hope that the House of Delegates will see fit to continue this committee just as it stands. It is one of the most important committees, and certainly the most active committee outside of the Legislative Committee of a year ago, that the Association has ever had to serve it. Their work has been done accurately, intelligently, conscientiously and in every other way that is commendable. This is a matter that needs experienced men to handle it properly. I hope, Mr. President and gentlemen, that the House of Delegates will see fit to discuss this report, and that an effort will be made to devise some way to extend this medical defense service. The members of the Association do not seem to appreciate the advantages that are offered by it. If you listened carefully to the reading of the report, you will find that the work of the committee in disposing of suits that have been brought or threatened has been most effective, and for the benefit of the country members, as they like to call themselves—that is, from the smaller cities and towns and the country—I would like to call attention to the fact that more suits have come from the cities this time, for the first time, than ever before. As a general proposition, the suits have come from the country, and I am not sure but that some of these Shelby

county suits are against country physicians. Now there seems to be a disposition on the part of the country member to believe that this proposition was conjured up for the benefit of the city surgeon, but there have been more suits brought during the past years against the country doctors than have been brought against the city doctors.

There are a few counties that have responded well. There are some counties that take no advantage of this thing at all, but if we can just get about twice as many men as we now have, it appears to me it would be a most tremendous benefit to the Association in general. I hope that some plan can be devised by which the number of members who take advantage of the medical defense can be materially increased.

Dr. Broyles: I am glad to hear Dr. West speak as he has. I understand that the majority of these suits come from the country, and really it is as much or more benefit to the country members than it is to the members of the larger towns. I think that is the case in other states. I have not investigated it thoroughly. I move that we accept the report.

The Chairman: That motion is already before the House.

A Member: I move to amend it, and that the same be accepted and left to the same committee, and the same committee continued.

The Chairman: That was my question put to Dr. Sheddan as to what disposition should be made of the committee?

A Member: I hope you will accept it.

The Chairman: You have heard the motion, that this report be accepted and the committee continued. Is there any further discussion?

Dr. Irish: Mr. President, I wish to state this in reference to this committee. I received a letter recently appointing me as Secretary of the Campbell County Association, and I am glad to know more of the work of the Medical Defense Committee. I am sure that as soon as the members of the Campbell County Society are apprised of its benefits and thoroughly understand it, that about all the Campbell county doctors will avail themselves of the benefits of this medical defense and will pay their dues. I wrote to the Secretary of the State Associa-

tion some days ago, and he referred me to Dr. Miller and I have not had time to take it up with Dr. Miller. I am sure that as soon as I get back home and have the next meeting the boys will send in their dues. I think there is no greater work that can be done for the benefit of the country doctor than to uphold this committee. I am thoroughly in sympathy with the work and will do all in my power to further it.

Dr. Lequire: Mr. President, referring to Dr. West's remarks in regard to the best needs for forwarding this work in the different counties, it is my idea that there are delegates here from each and every county society in the state, and while there are a great many members in the counties who do not thoroughly understand this medical defense proposition or law, it would be wise for the delegates to familiarize themselves thoroughly with the workings of this defense law and go back home and report their understanding of it to their county societies and recommend to them that they accept it. In that way we will get it advertised in the county societies, and that is always the best way to get men to work, is to make them understand it.

The Chairman: I had that same thought in mind and intended to say something to that effect before putting this motion, to urge each delegate here to go back home and make some sort of report to his county society, that they may understand the purpose of this medical defense fund.

Dr. Smith: Mr. President, I really think that if it could be constitutionally done that if this matter were discussed in the general assembly and not before the delegates alone, it would be a matter of education to all of us. It is generally inferred that we in the House of Delegates here, conjure up a lot of stuff for purposes that the members don't understand. I really think the best education we could get would be to discuss it in the general assembly, and I think we will get results.

The Chairman: There is no reason why it should not be brought up and have some remarks made by the Chairman or members of the Committee on Medical Defense.

Dr. Painter: I didn't understand that this

was optional; our secretary told us that we had to pay it. (Laughter).

The Chairman: You have an unusually good secretary, doctor.

Dr. Painter: I am surprised that we have this discussion here at all for I thought it was not optional. Perhaps it would be a good plan if you could get the secretaries here to go home and tell the members to pay it. We have already paid ours.

Dr. Miller: I am glad that your secretary did that. If we can get all the secretaries to work that way we will have no trouble, and will be in better shape. That is responsible for the increase in Hamblen county. Washington county has done likewise. Shelby county last year paid for fifty members; this year it only paid for twenty. If we could get the committee to lay this matter before Shelby county, we could get this done all right. Now Davidson county is doing the same way. Knox county has come up with a larger number this year than the year before. Now there is one disadvantage about making it compulsory. The man who is careless in paying his fee is careless with his cases, and this man, in my judgment, is going to be—at most he is the man who is going to have more suits and abuse his professional work. So, as we have the cream of the profession here, the men who are careful about their business, their professions and occupations, if the secretaries would take this matter up through their societies, the desired end could be reached. Now last year there were eighteen or twenty counties that had not paid anything at all; this year it is reduced to twelve or fourteen counties, and there is an increase in most of the counties, but the great decrease in Shelby county offsets that. Now, I believe that this thing is growing in interest, and if we can get the county secretaries to lay this matter carefully before the societies, or what would be better still, as the smaller counties have done, to get them to increase their dues, and by increasing the dues include the medical defense fee.

A Member: I wish to ask a question. Dr. Miller, wouldn't it be well to have this matter brought up in the general assembly and have the intentions of this fund explained to all the members of the Society at some time during

the session? Now, a great many do not understand what this medical defense business is, and I believe that instead of the members paying \$15.00, \$20.00, \$25.00 or \$50.00 a year to some association for that protection, they would rather have it done at the same cost in their state society.

Dr. Crook: Mr. Chairman: I have been doubtful as to whether we would ever make this thing a success unless the fees for medical defense should be included in the dues. Now, the committee don't know anything about where we are going to be. If it is entirely optional with the men and if it depends on the efficiency of the men and the secretary's ability to collect, we cannot form our budget for the coming year, and the committee is utterly at sea. So, in order to be successful in making up the budget, we would have to make it compulsory. I will change that and say that the only way to make it successful is to make it an integral part of the business management of the Tennessee State Medical Association, and make it a regular plan to furnish dues for this defense just like we pay the secretary's salary; then we avoid the use of that word "compulsory." Simply allow the dues to be made one dollar more, and, with this additional fund, we then place ourselves in the position of having 1,250 or 1,500 members defending the one member who has been attacked. It is not a question of the paltry sum of one dollar or the protection of an outside corporation; there has got to be a moral support or an ethical support which is worth a great deal more. The combined strength of fifteen hundred reputable physicians all over the State of Tennessee is a bigger asset to the individual which belongs to it than the outside protection. We can all pay \$15.00 a year for protection in a regular insurance company. It is foolish to think that we can buy this protection for one dollar and leave it optional with the individual whether he shall accept it or not. Now, in my judgment, we will never get this thing on a business basis until the one dollar provision is made an integral part of the state dues. Whether the time is ripe for it now, I do not know. It seems to me that that is the only way to provide for it.

Dr. Reagor: Suppose a member leaves his dues in arrears, he is still a member?

Dr. Crook: No more than in a lodge. If you are behind in your lodge dues you have no protection.

Dr. Reagor: It is just the same when you let an insurance policy lapse. If a man dies, while it is lapsed, he don't get it,

Dr. Parker: In my county, I don't get the fellows to pay, for they say, "What have we to show that we are members? They don't send out any cards. When I send a check to the secretary he doesn't acknowledge receipt of the check; a man pays one dollar and never hears anything more about it." That is the plea they put up to me, and won't pay it on that account. If they would have a card struck off and have it printed with "Medical Defense" on it—I think that would solve the problem.

Dr. Roberts: The State Associations generally have done away with the mailing card.

The Secretary: The secretaries of the county societies usually send in the medical defense fee, and for those which come to me, I immediately send a Treasurer's check to the chairman of the committee. Now, the Chairman of the Committee on Medical Defense does not acknowledge the receipt fees except through endorsement of the check. If we have to write to every man who sends a dollar for medical defense and send him a card the year, you are not going to have more than ninety cents out of your dollar remaining. The secretary represents his membership in the county society and my receipt to him for such dues as are sent to me is an official receipt that he can show his members if he is disposed to do so. I don't think it is necessary to acknowledge receipt further than that. Heretofore the number of those who have taken advantage of the medical defense, have been reported in the Journal. I am perfectly willing if you want me to do so, and the chairman of the committee will furnish me with the names, to send them personal receipts.

Dr. Reagor: As secretary of our society, when a man pays his medical defense dues, I note it down, almost the hour that he paid it, and then send the money direct to the committee, so that if any question should come

up, I would have all the facts about it. I think more depends on the secretary than any one man. You may go in the other hall and report to the general assembly, but it all falls back on the Secretary of the Association. He is the man that you count on more than any one else. It is troublesome to get them all to put up the defense dollar, but keep working at them until you get most of them and get the best of them. I think that is the best way to do it. I don't think there is any need of going to the expense of procuring cards, but let the Secretary keep a record of it.

Dr. B. M. Tittsworth: I am a member from Jefferson county and I will say if you will have the cards printed—from the questions that our members have asked me—when the members pay this medical defense fee, showing them that it is a protection, I believe that will solve the whole question. They want something to show like the insurance companies give them: just a card—a membership card will be enough. I believe that will solve the whole thing in two or three years.

The Chairman: I don't think there is any need of a motion for that. There is no reason why the by-laws couldn't be amended to increase the dues if the House of Delegates sees fit to do it.

Dr. Haase: I don't understand this medical defense. It has never been put up to the Shelby Medical Society as strong as I have heard it here this morning in a very few minutes. I don't remember ever having been asked to pay it, but I agree with Dr. Crook, if that is what he meant, that this payment should be a part and parcel of the work of the Association. As long as it is put up, each member will be paying a dollar towards medical defense. Is there any reason why the dues of the State Association should not be raised to \$3.00, including the medical defense? I am simply asking for information. Otherwise, the committee will never know what their budget is going to allow them for the year. I am asking for information whether or not that would not be a fixed fee on the work of the State Association?

The Chairman: There is no reason why the by-laws could not be amended to increase the dues, if the House of Delegates sees fit to do

it. We are taking up a good deal of time now to questions that are not pertinent.

Dr. Zirkle: That can be very easily provided for. It is a matter for each individual. He knows what he is entitled to. That can be provided for by the county secretary. Now, our Secretary of Roane county has an official receipt of the Society, and in this receipt when dues are paid, it sets out \$2.00 for the State Association dues, \$1.00 for county society dues and \$1.00 for medical defense. Now, when a member is ready to pay his dues the \$3.00 necessarily must be paid; this other dollar is optional with the member. If he decides to take this, the receipt shows it. That is all that is necessary. That is an official receipt from the county society and it seems to me to simplify matters very much if all county societies would have an official receipt of this kind showing such members as have paid and stating the purpose for which the amount is paid. It is a very small matter that the county secretary should take care of in the interest of the society.

Dr. Miller: Mr. Chairman, if I may be permitted to speak, I think there is a way that that can be overcome without any drawback or without any of the members thinking that this body as the House of Delegates is trying to drive them into it. If the county society would raise its dues to include this one dollar and notify Secretary West here and he in turn notify the committee, then I believe it will be entirely proper for this committee to protect every doctor in that society who pays up his dues on the first or by the first of April for the entire year. Now the great trouble is that a lot of men get busy with Christmas and they forget to pay their dues until ten and sometimes thirty days have elapsed. For instance, a member at Elk Valley had a suit brought against him for alleged mal-practice and let thirty days pass by before he paid his fee; still he goes ahead in the year 1916 and forgets to send in his dues after sixty days have elapsed—after he had that experience, waiting until March first to send in his medical defense dues. When men are that way you cannot help it. If the county society will raise its dues and notify the secretary, then I think it would be proper for this society to give him protection

from the first day of January that he is in good standing on the first day of April, but otherwise we cannot afford to protect a member except when the money is in the hands of some one other than himself. Now, as has been said here by Dr. Reagor, we stamp the back of every check when received. I was out of the state on the first day of January, but I had my secretary in the office stamp on every check the date received; I had her not only do that, but I had her save the envelope with the United States postoffice stamp on it and I verified her stamp with the United States postoffice stamp to see that she had made no error, to keep this thing as accurately as we could, as we cannot afford to give back-protection except as I have explained here.

Now, take Davidson county, one of the biggest and best counties, they do not report every time on the first day of the year. There were a few days elapsed before they made their report, and yet I believe if they had their dues so fixed, credit would have been given them; but not so with the individual member.

Now, again, sometimes men have written to me about receipts. I write them a letter and say the commercial people believe that the stamped check is the best form; their receipt is that stamp from the committee; if it comes from the Treasurer of the Association it is stamped on that check; if it comes from the Secretary of the Society, it is stamped on that check; if it comes from the individual member it is stamped on that check; but wherever a man sends a dollar or wherever he sends a post-office order we send him direct a receipt following. You see we have 1,280 members paying membership dues and if we send out 1,280 receipts to 1,280 members, it is quite a little expense in the way of stamps and I don't believe that it is the best plan. Now, we are getting along splendidly, gentlemen. It may be that we have suits against members who have never said a word about it because they are carrying insurance policies. Some of the insurance agents have told me that they are going to raise their dues to \$35. Some of them now are paying \$15, some of them \$25, but talking of raising it to \$35. Since the State Association has taken up this plan, the insurance companies are coming back with a counter-

proposition. I have some correspondence which I thought I would submit here. They come along now and say that twenty-five per cent of our members will agree to take their policy, they will give us a reduction in that policy, coming down I think to about \$12. The insurance company I told you about last year is willing to it, but their attorneys objected to our attorneys having the lead in the suit. We told them that we were here to win; that we believed that the vast majority of mal-practice suits were little more than black-mail, that we were here to defend our members' good characters, that we did not expect any liability and that their attorneys ought to know it beforehand, and we did not want their attorneys to take the lead. We are willing for their attorneys to be associated with our attorneys in the suit to see that every step was taken to keep the judgments down, but we were not willing for the other. Now that is the situation, and if the county societies will take this matter up in that way, I believe it will simplify matters and not make them believe that this body is trying to force them if they don't.

Dr. Haase: I move you that the by-laws be so changed.

The Chairman: There is a motion before the House; that this report be accepted and the committee continue. The motion was seconded, put, and carried.

The Chairman: I suggest that if you want to amend the by-laws, you write it out. That will have to go over until tomorrow.

Dr. Haase: What I wanted to suggest is that the by-laws be amended to include the medical defense fee in the State Association dues. But I will bring it up this afternoon, and at the same time end the discussion of the matter at the two o'clock session.

The Chairman: That is due notice, and that matter will come up at the next session in accordance with the provisions of the constitution to amend the by-laws.

The Secretary: Mr. President, may I have just one moment, to show these members how we handle that thing of medical defense fees through our office?

The Chairman: All right.

The Secretary: Gentlemen, on our books, whenever a county secretary sends in any de-

fense funds, or dues, including these fees, it is entered on the margin of the book how many medical defense fees are included. Dr. Cowden's report shows that, too, on the margin of his report, and his check book shows the names on the stub of every medical defense check that is sent in and forwarded. You see it there; and we keep it just as accurately as we can.

The Chairman: The next order of business is the Report of the Treasurer.

The Treasurer: Your Treasurer begs leave to submit the following report:

TREASURER'S REPORT.

DISBURSEMENTS.

April 1st, 1915.

April		
1	Dr. S. R. Miller, Medical Defense----	\$ 2 00
1	Dr. S. R. Miller, Medical Defense----	10 00
2	Olin West, Secretary, stamps-----	5 00
3	Dr. S. R. Miller, Medical Defense----	2 00
5	Telephone for April -----	3 50
5	Telephone Company for telegrams for Committee on Public Policy and Legis- lation -----	7 11
5	Dr. S. R. Miller, Medical Defense----	1 00
6	Dr. S. R. Miller, Medical Defense----	1 00
8	Southern Star Laundry -----	1 29
9	Dr. S. R. Miller, Medical Defense----	7 00
9	Rich Printing Co. -----	252 73
10	Dr. S. R. Miller, Medical Defense----	5 00
10	Dr. Olin West, Secretary, stamps----	10 00
12	Dr. S. R. Miller, Medical Defense----	7 00
12	Dr. S. R. Miller, Medical Defense----	1 00
16	Dr. S. R. Miller, Medical Defense----	10 00
24	Dr. S. R. Miller, Medical Defense----	5 00
24	Peter A. Conroy, running stereoptican at meeting -----	15 00
29	Sory Sign Co., signs for annual meet- ing -----	9 50
29	Foster, Parkes Co., binder punching sheets -----	1 85
29	Olin West, Secretary, postage-----	10 00
29	Mabel Miller, April salary-----	60 00
May		
1	Olin West, Secretary, postage -----	5 00
5	S. R. Miller, Medical Defense-----	1 00
5	Y. M. C. A., rent and telephone dur- ing meeting -----	96 00
6	Olin West, Secretary, stamps -----	5 00
8	Dr. S. R. Miller, Medical Defense----	1 00
8	Dr. Olin West, Secretary, stamps----	5 00
8	Cumberland Telephone Co., expense Legislation Committee -----	2 13
8	Cumberland Telephone Co., telephone for May -----	3 50
8	Cumberland Telephone Co., long dis- tance tolls Committee on Legislation -----	3 88
12	William Whitford, reporting Nashville meeting -----	160 02
12	Battle Creek Sanitarium—amount overpaid on advertisement, Dr. Foute -----	28 28
12	Ambrose Printing Co.—letter heads, etc. -----	23 00
14	Grace Dawson—reporting House of Delegates -----	28 25
14	Dr. S. R. Miller—Medical Defense--	1 00
14	Misses King and Selley—delivery of Journals -----	1 80

17	Rich Printing Co.—Journals, etc., for May -----	346 75
17	Mabel Miller—part on May salary--	30 00
20	Olin West, Secretary—stamps -----	5 00
24	Olin West, Secretary—from check on Indian Doctor Fund -----	2 00
25	Miss Margaret Gerraty—stenographic work on Legislation Committee ----	16 40
26	Olin West, Secretary—stamps -----	5 00
June		
1	Olin West, Secretary—stamps -----	5 00
1	Mabel Miller—balance on May salary	30 00
4	Dr. S. R. Miller—Medical Defense--	9 00
4	Dr. S. R. Miller—Medical Defense--	1 00
7	Dr. J. H. Lassiter—telephone services	4 23
7	Corner Realty Co.—May rent-----	18 00
9	Southern Star Laundry -----	1 60
9	Foster, Parkes Co.—one punch ----	1 25
9	Misses King and Selley—multigraph letters, delivery of Journal -----	2 85
11	W. M. McCabe—expenses Committee Public Policy and Legislation-----	50 00
15	Mabel Miller—part on June salary--	30 00
17	Dr. Olin West, Secretary—stamps--	5 00
18	Rich Printing Co.—June Journals, etc. -----	219 43
19	Dr. S. R. Miller—Medical Defense--	1 00
24	Dr. S. R. Miller—Medical Defense--	1 00
28	L. G. Archer—commission on Carter- Hough ad. -----	3 00
28	L. G. Archer—commission on South- ern Ice Co. ad. -----	20 00
July		
2	L. G. Archer—balance commission on Howe Ice Co. ad. -----	10 00
8	Mabel Miller—balance on June salary	30 00
3	Cumberland Telephone & Telegraph Co. -----	3 50
6	Mr. H. Handy—commission on Nash- ville Analytical Laboratory ad. -----	3 00
7	Olin West, Secretary—stamps -----	5 00
8	Corner Realty Co.—June rent-----	18 00
8	Dr. S. R. Miller—Medical Defense--	1 00
10	Mabel Miller—part on July salary--	30 00
19	Olin West, Secretary—McNairy Coun- ty contribution to Indian doctor fund -----	3 75
19	Dr. Olin West, Secretary—salary----	200 00
24	Rich Printing Co.—July Journals, etc. -----	213 37
27	Dr. Olin West, Secretary—stamps----	5 00
August		
3	Cumberland Telephone Co.-----	5 33
3	Balance on July salary of Mabel Miller -----	30 00
3	Dr. Olin West, Secretary—stamps----	5 00
4	Corner Realty Co.—July rent-----	18 00
5	Dr. S. R. Miller—Medical Defense----	2 00
14	Mabel Miller—part on August salary	30 00
14	Rich Printing Co.—August Journal--	171 15
17	Dr. Jno. B. Haskins—overpaid dues--	6 00
20	Dr. Olin West, Secretary—stamps----	5 00
September		
4	First Savings Bank & Trust Co.—over- draft -----	6 00
4	Misses King and Selley—Journals de- livered, etc. -----	2 85
4	Corner Realty Co.—August and Sep- tember rent -----	36 00
4	Southern Star Laundry—office laun- dry -----	1 77
4	Cumberland Telephone Co.—telephone services -----	3 50
4	Ambrose Printing Co.—pencils, erasers and file -----	1 25

4	Southern Ice Co.—ice for June, July and August	3 25	12	Dr. S. R. Miller—Medical Defense..	4 00
4	Mabel Miller—balance on August salary	30 00	12	Dr. Olin West, Secretary—stamps....	5 00
9	Dr. S. R. Miller—Medical Defense..	2 00	12	Corner Realty Co.—January rent....	18 00
14	Mabel Miller—part on September salary	30 00	12	Dr. S. R. Miller—Medical Defense..	1 00
14	First Savings Bank & Trust Co.....	3 00	14	Dr. S. R. Miller—Medical Defense..	8 00
17	Dr. Olin West, Secretary—stamps....	5 00	15	Mabel Miller—balance on January salary	30 00
22	Rich Printing Co.—September Journals, etc.	208 19	17	Western Union Te. Co.—delivery of January Journals	70
29	Dr. Olin West, Secretary—part on salary	125 00	18	Rich Printing Co.—January Journals	200 00
30	Herman Handly—commission on renewal ad.	9 75	18	Dr. S. R. Miller—Medical Defense..	2 00
October			18	Dr. Olin West, Secretary—stamps....	5 00
5	Mabel Miller—balance on September salary	30 00	20	Dr. S. R. Miller—Medical Defense..	7 00
5	Wiles, Photographer—framing two pictures	1 00	21	Dr. Herman Spitz—commission on Howe Water Co. ad.	30 00
5	Corner Realty Co.—October rent....	18 00	22	Dr. S. R. Miller—Medical Defense..	8 00
6	Herman Handly—commission on Nashville Analytical Co.	1 20	25	Dr. Olin West, Secretary—stamps....	5 00
6	Cumberland Telephone Co.—telephone service	3 81	26	Dr. S. R. Miller—Medical Defense..	4 00
7	Dr. Olin West, Secretary—stamps....	5 00	28	Southern Ice Co.—ice for office....	17 60
9	Dr. Jere L. Crook—expenses del. to A. M. A., 1915	50 00	28	Dr. S. R. Miller—Medical Defense..	14 00
12	Mabel Miller—part on October salary	30 00	February		
18	Rich Printing Co.—printing October Journals, etc.	208 16	1	Mabel Miller—part on February salary	30 00
18	Dr. S. R. Miller—Medical Defense..	2 00	1	Dr. S. R. Miller—Medical Defense..	2 00
20	Dr. S. R. Miller—Medical Defense..	1 00	2	Mabel Miller—balance on February salary	30 00
20	Dr. Olin West, Secretary—stamps....	5 00	4	Dr. Olin West, Secretary—stamps....	5 00
23	Mabel Miller—balance on October salary	30 00	5	Dr. S. R. Miller—Medical Defense..	16 00
November			7	Dr. S. R. Miller—Medical Defense..	4 00
2	Cumberland Tel. Co.—telephone services	3 50	8	Dr. S. R. Miller—Medical Defense..	1 00
2	Dr. Olin West, Secretary—stamps....	5 00	9	Dr. S. R. Miller—Medical Defense..	4 00
6	Dr. S. R. Miller—Medical Defense..	1 00	10	Dr. S. R. Miller—Medical Defense..	1 00
6	Miss Mabel Miller—part on November salary	30 00	10	Dr. F. M. Boyatt—Medical Defense check returned	1 00
12	Dr. Perry Bromberg—expenses del. to A. M. A., 1915	50 00	10	Cumberland Tel. Co.—telephone services	3 91
15	Dr. Olin West, Secretary—part salary	50 00	11	Dr. S. R. Miller—Medical Defense..	2 00
16	Mabel Miller—balance on November salary	30 00	14	Dr. S. R. Miller—Medical Defense..	8 00
20	Dr. Olin West—part salary	50 00	14	Dr. Olin West, Secretary—stamps....	5 00
23	Dr. Olin West, Secretary—stamps....	5 00	15	Corner Realty Co.—February rent....	18 00
29	Dr. Olin West—part salary	25 00	15	Corner Realty Co.—November and December rent	36 00
December			17	Western Union Tel. Co.—delivery of February Journals	1 00
1	Mabel Miller—part on salary	30 00	17	Dr. S. R. Miller—Medical Defense..	4 00
2	Cumberland Tel. Co.—phone services	3 82	17	Dr. S. R. Miller—Medical Defense..	2 00
14	Rich Printing Co.—printing November Journal, etc.	224 48	18	Dr. S. R. Miller—Medical Defense..	3 00
14	Underwood Typewriter Co.—two ribbons	1 50	18	Dr. S. R. Miller—Medical Defense..	5 00
16	Mabel Miller—balance on December salary	30 00	19	Rich Printing Co.—February Journals, etc.	236 42
17	Dr. Olin West, Secretary—stamps....	5 00	19	Dr. S. R. Miller—Medical Defense..	4 00
22	Rich Printing Co.—December Journal, etc.	204 46	21	Dr. S. R. Miller—Medical Defense..	1 00
January, 1916.			22	Dr. S. R. Miller—Medical Defense..	2 00
4	Dr. S. R. Miller—Medical Defense..	23 00	23	Dr. Olin West, Secretary—stamps....	5 00
4	Mabel Miller—part on January salary	30 00	23	Dr. S. R. Miller—Medical Defense..	3 00
4	Dr. Olin West, Secretary—stamps....	5 00	25	Dr. S. R. Miller—Medical Defense..	1 00
6	Southern Ice Co.—September, October, November and December	4 00	29	Cain-Sloan Co.—towels for office....	60
6	Foster & Parkes Co.—one ledger	1 35	March		
7	Dr. S. R. Miller—Medical Defense..	1 00	1	Corner Realty Co.—March rent....	18 00
8	Dr. S. R. Miller—Medical Defense..	10 00	1	Mabel Miller—part on March salary	30 00
10	Dr. Olin West—part on salary	100 00	2	Dr. S. R. Miller—Medical Defense..	1 00
10	Cumberland Tel. Co.—telephone services	6 00	2	Cumberland Tel. Co.—telephone for March	6 60
			2	Ambrose Printing Co.	7 15
			2	Southern Ice Co.—January and February bill	2 00
			2	Dr. S. R. Miller—Medical Defense..	1 00
			6	Bastian Bros. Co.—badges for meeting	26 00
			7	Dr. S. R. Miller—Medical Defense..	3 00
			8	Dr. Olin West, Secretary—stamps....	5 00
			9	Dr. S. R. Miller—Medical Defense..	12 00
			11	Dr. S. R. Miller—Medical Defense..	7 00
			11	Mabel Miller—balance on March salary	30 00
			15	Dr. Olin West, Secretary—stamps....	5 00

15	Dr. S. R. Miller—Medical Defense--	3 00
16	Dr. S. R. Miller—Medical Defense--	2 00
16	Tenn. Dist. Tel. Co.—delivery of March Journals -----	1 00
17	Dr. S. R. Miller—Medical Defense--	3 00
17	Dr. S. R. Miller—Medical Defense--	2 00
17	Rich Printing Co.—printing March Journal -----	203 75
18	Dr. S. R. Miller—Medical Defense--	19 00
18	Dr. Olin West, Secretary—stamps----	5 00
20	Dr. S. R. Miller—Medical Defense--	7 00
20	Dr. S. R. Miller—Medical Defense--	1 00
23	Dr. S. R. Miller—Medical Defense--	1 00
23	Dr. S. R. Miller—Medical Defense--	15 00
24	Dr. Olin West—expenses to Knoxville for Association -----	14 32
24	Dr. S. R. Miller—Medical Defense--	1 00
24	Dr. Olin West, Secretary—stamps----	5 00
25	Dr. S. R. Miller—Medical Defense--	1 00
27	Dr. S. R. Miller—Medical Defense--	6 00
27	Dr. J. W. Cox—overpaid dues on mem- bership list -----	4 00
28	Dr. Olin West—balance on salary to April 1, 1916 -----	450 00
28	Dr. S. R. Miller—Medical Defense--	10 00
28	Dr. S. R. Miller—Medical Defense--	3 00
28	Underwood Typewriter Co.—repairs on typewriter -----	5 00
28	Star Laundry Co.—laundry for office	1 08
29	Tenn. Dist. Tel. Co.—delivery of April Journals -----	85
30	Rich Printing Co.—April Journals, etc. -----	214 01
30	Dr. S. R. Miller—Medical Defense--	2 00
30	Dr. Olin West, Secretary—stamps----	5 00
30	T. B. Service Co.—cleaning rugs-----	75
30	Ambrose Printing Co.—jumbo file----	75
30	Corner Realty Co.—April rent-----	18 00
31	Dr. S. R. Miller—Medical Defense--	5 00
31	Dr. C. N. Cowden—salary as Treas- urer -----	100 00
Total -----		\$6,271 18

TREASURER'S REPORT.

RECEIPTS.

MEMBERSHIP CASH—1915-1916.

April		
1	Dr. W. G. Saunders, Secretary of Mad- ison County -----	\$ 32 00
1	Dr. F. B. Reagor, Secretary Berford County -----	4 00
1	Dr. E. W. Mabry, Secretary Jackson County ----- (\$3.00 Medical Defense)	9 00
1	Dr. J. W. Rogers, Secretary Sevier County -----	10 00
1	Dr. H. H. McCampbell, Secretary Knox County -----	42 00
1	Dr. J. R. Nankivell, Secretary Me- Minn County -----	4 00
1	Dr. J. W. Cox, Secretary Washington County ----- (\$10.00 Medical Defense)	56 00
5	Dr. J. L. Andrews, Secretary Shelby County ----- (\$2.00 Medical Defense)	10 00
5	Dr. H. H. McCampbell, Secretary Knox County -----	4 00
5	Dr. W. W. Hill, Secretary Roane County -----	2 00
5	Dr. H. G. Edmonson, Secretary Weak- ley County ----- (\$1.00 Medical Defense)	7 00
6	Dr. H. H. McCampbell, Secretary Knox County -----	6 00

6	Dr. W. C. Bilbro, check for 57 mem- bers, 1913 -----	114 00
6	Dr. Jno. B. Haskins, Secretary Hamil- ton County -----	16 00
6	Dr. E. S. Hopper, Secretary Crockett County -----	6 00
7	Dr. DeWitt Smith, Secretary Gibson County -----	2 00
8	Dr. T. A. Patrick, Secretary Lincoln County -----	6 00
8	Dr. B. M. Little, Secretary Montgom- ery County -----	6 00
8	Dr. H. H. McCampbell, Secretary Knox County -----	18 00
9	Dr. E. E. Northcutt, Secretary Warren County -----	2 00
9	Dr. F. A. McClintock, Secretary Camp- bell County -----	2 00
9	Dr. Jno. W. Morris, Secretary Fayette County -----	2 00
9	Dr. E. C. Freeman, Secretary Giles County -----	4 00
9	Dr. J. L. Andrews, Secretary Shelby County -----	19 00
9	Dr. J. L. Andrews, Secretary Shelby County -----	20 00
9	Dr. Jno. B. Haskins, Secretary Ham- ilton County -----	2 00
10	Dr. Samuel Parker, Secretary Hen- derson County -----	2 00
10	Dr. B. S. Rhea, Secretary Wilson County -----	2 00
10	Dr. J. L. Andrews, Secretary Shelby County ----- (\$5.00 Medical Defense)	21 00
12	Dr. F. W. Watson, Secretary Obion County ----- (\$7.00 Medical Defense)	37 00
12	Dr. W. E. Gallion, Secretary Morgan County -----	2 00
12	Dr. Jno. Morris, Secretary Fayette County -----	2 00
12	Dr. H. H. McCampbell, Secretary Knox County -----	6 00
16	Dr. L. A. Yarbrough, Secretary Tipton County ----- (\$1.00 Medical Defense)	7 00
12	Dr. O. Dulaney, Secretary Dyer County -----	40 00
12	Dr. C. P. Martin, Secretary Putnam County ----- (\$1.00 Medical Defense)	3 00
15	Dr. J. L. Andrews, Secretary Sullivan County ----- (\$4.00 Medical Defense)	16 00
15	Dr. C. W. Inge, Secretary Franklin County ----- \$5.00 Medical Defense)	19 00
15	Dr. C. A. Abernathy, Secretary Giles County -----	2 00
15	Dr. B. A. Blanton, Secretary Greene County -----	54 00
15	Dr. J. Y. Freeman, Secretary Macon County -----	2 00
16	Dr. C. W. Inge, Secretary Franklin County -----	2 00
17	Dr. T. J. Hickman, Secretary Loudon County -----	2 00
17	Dr. B. M. Tittsworth, Secretary Jef- ferson County ----- (\$2.00 Medical Defense)	8 00
20	Dr. B. C. Dodds, Secretary Carroll County ----- (\$1.00 Medical Defense)	5 00
21	Dr. W. W. Walker, Secretary Dick- son County -----	2 00

(Medical Defense)

22	Dr. J. L. Andrews, Secretary Shelby County -----	2 00	14	bell County -----	2 00
27	Dr. Jno. B. Haskins, Secretary Hamilton County -----	10 00	14	Dr. J. F. Gallagher, Secretary Davidson County -----	12 00
May			14	Dr. B. C. Dodds, Secretary Carroll County -----	2 00
3	Dr. E. C. Freeman, Secretary Giles County -----	2 00	15	Dr. Jno. B. Haskins, Secretary Hamilton County -----	2 00
4	Dr. O. Dulaney, Secretary Dyer County -----	3 00	16	Dr. P. D. Biddle, Secretary Maury County -----	8 00
	(\$1.00 Medical Defense)		17	Dr. H. G. Edmonson, Secretary Weakley County -----	4 00
5	Dr. W. E. Gallion, Secretary Morgan County -----	2 00	18	Dr. W. A. Sams, Secretary Unicoi County -----	32 50
7	Dr. J. F. Gallagher, Secretary Davidson County -----	8 00		(Returned to bank)	
7	Dr. Jno. Morris, Secretary Fayette County -----	2 00	19	Dr. H. G. Edmonson, Secretary Weakley County -----	3 00
7	Dr. B. C. Dodds, Secretary Carroll County -----	2 00		(\$1.00 Medical Defense)	
8	Dr. B. C. Dodds, Secretary Carroll County -----	3 00	21	Dr. B. J. High, Secretary Smith County -----	2 00
	(\$1.00 Medical Defense)		21	Dr. B. N. White, Secretary Rutherford County -----	2 00
11	Dr. T. J. Hickman, Secretary Loudon County -----	6 00	21	Dr. B. N. Tittsworth, Secretary Jefferson County -----	2 00
11	Dr. Jno. B. Haskins, Secretary Hamilton County -----	4 00	24	Dr. E. W. Mabry, Secretary Jackson County -----	3 00
14	Dr. B. M. Tittsworth, Secretary Jefferson County -----	3 00		(\$1.00 Medical Defense)	
	(\$1.00 Medical Defense)		25	Dr. J. L. Andrews, Secretary Shelby County -----	12 00
17	Dr. O. Dulaney, Secretary Dyer County -----	4 00		(\$2.00, 1914 dues)	
19	Dr. T. G. Jackson, Secretary McNairy County -----	2 00	28	Dr. J. R. Nankivell, Secretary McMinn County -----	2 00
19	Dr. J. A. Delauey, Secretary Sullivan County -----	10 00	30	Dr. G. P. Martin, Secretary Putnam County -----	2 00
22	Dr. T. G. Jackson, Secretary McNairy County -----	6 00	July		
	(\$2.00 Indian Doctor Fund)		2	Dr. H. H. McCampbell, Secretary Knox County -----	2 00
24	Dr. R. W. Tate, Secretary Henderson County -----	2 00	8	Dr. J. B. Lafliff, Secretary Stewart County -----	3 00
25	Dr. Jno. B. Haskins, Secretary Hamilton County -----	2 00		(\$1.00 Medical Defense)	
25	Dr. W. W. Hill, Secretary Roane County -----	2 00	10	Dr. Jno. B. Haskins, Secretary Hamilton County -----	16 00
25	Dr. J. H. McSwain, Secretary Henry County -----	2 00	14	Dr. DeWitt Smith, Secretary Gibson County -----	2 00
28	Dr. E. E. Northcutt, Secretary Warren County -----	2 00		(Dr. Buck)	
29	Dr. H. H. McCampbell, Secretary Knox County -----	6 00	17	Dr. T. G. Jackson, Secretary McNairy County -----	5 75
29	Dr. T. J. Hickman, Secretary Loudon County -----	2 00		(\$3.75 Indian Doctor Fund)	
29	Dr. E. S. Hopper, Secretary Crockett County -----	2 00	24	Dr. F. B. Reagor, Secretary Bedford County -----	2 00
31	Dr. DeWitt Smith, Secretary Gibson County -----	2 00	24	Dr. B. C. Dodds, Secretary Carroll County -----	2 00
31	Dr. Jno. B. Haskins, Secretary Hamilton County -----	2 00	24	Dr. B. J. High, Secretary Smith County -----	2 00
31	Dr. F. B. Reagor, Secretary Bedford County -----	2 00	August		
June			3	Dr. J. F. Gallagher, Secretary Davidson County -----	10 00
4	Dr. W. A. Sams, Secretary Unicoi County -----	27 00	5	Dr. Jno. W. Cox, Secretary Washington County -----	6 00
	(\$9.00 Medical Defense)			(\$2.00 Medical Defense)	
4	Dr. J. L. Edwards, Secretary Haywood County -----	3 00	7	Dr. J. A. McCulloch, Secretary Blount County -----	2 00
	(\$1.00 Medical Defense)		16	Dr. S. G. Parker, Secretary Henderson County -----	2 00
10	Dr. B. J. High, Secretary Smith County -----	2 00	17	Dr. A. F. Richards, Secretary White County -----	2 00
11	Dr. W. A. Sams, Secretary Unicoi County -----	29 75	25	Dr. J. L. Andrews, Secretary Shelby County -----	4 00
11	Dr. Jno. B. Haskins, Secretary Hamilton County -----	2 00	27	Dr. E. S. Hopper, Secretary Crockett County -----	2 00
12	Dr. Jno. Morris, Secretary Fayette County -----	2 00	September		
14	Dr. F. A. McClintock, Secretary Camp-		2	Dr. J. A. Delaney, Secretary Sullivan County -----	6 00
			2	Dr. W. G. Saunders, Secretary Madison County -----	2 00
			9	Drs. Lewis and Blue, Shelby County (Medical Defense) -----	2 00

15	Dr. B. N. White, Secretary Rutherford County -----	2 00	31	Dr. H. H. McCampbell, Secretary Knox County -----	4 00
18	Dr. F. B. Reagor, Secretary Bedford County -----	4 00	31	Dr. J. F. Gallagher, Secretary Davidson County -----	2 00
29	Dr. J. L. Andrews, Secretary Shelby County -----	4 00	18	Dr. B. N. Tittsworth, Secretary Jefferson County -----	39 00
October			(\$3.00 Medical Defense)		
7	Dr. J. F. Gallagher, Secretary Davidson County -----	14 00	23	Dr. J. L. Andrews, Secretary Shelby County -----	2 00
13	Dr. Jno. B. Haskins, Secretary Hamilton County -----	8 00	24	Dr. A. F. Richards, Secretary White County -----	28 00
18	Dr. F. W. Watson, Secretary Obion County -----	2 00	31	Dr. U. G. Jones, Secretary Anderson County -----	12 00
	(J. D. Carlton)		31	Dr. T. M. Roberts, Secretary Monroe County -----	27 00
19	Dr. J. L. Andrews, Secretary Shelby County -----	2 00	(\$9.00 Medical Defense)		
19	Dr. J. L. Andrews, Secretary Shelby County -----	16 00	January, 1916.		
	(\$2.00 Medical Defense)		4	Dr. B. J. High, Secretary Smith County -----	28 00
20	Dr. J. B. Haskins, Secretary Hamilton County -----	2 00	4	Dr. DeWitt Smith, Secretary Gibson County -----	3 00
20	Dr. O. Dulaney, Secretary Dyer County -----	5 00		(\$1.00 Medical Defense)	
	(\$1.00 Medical Defense)		7	Dr. B. M. Tittsworth, Secretary Jefferson County -----	3 00
22	Dr. Jno. Morris, Secretary Fayette County -----	2 00		(\$1.00 Medical Defense)	
23	Dr. Jno. Morris, Secretary Fayette County -----	2 00	7	Dr. W. K. Vance, Secretary Sullivan County -----	40 00
25	Dr. J. O. Delaney, Secretary Sullivan County -----	8 00	7	Dr. B. F. Fyke, Secretary Robertson County -----	26 00
28	Dr. J. B. Haskins, Secretary Hamilton County -----	4 00	8	Dr. T. M. Roberts, Secretary Monroe County -----	3 00
28	Dr. J. L. Andrews, Secretary Shelby County -----	4 00		(\$1.00 Medical Defense)	
November			8	Dr. Ily Lockhart, Secretary Grundy County -----	27 00
1	Dr. F. A. McClintock, Secretary Campbell County -----	2 00		(\$9.00 Medical Defense)	
2	Dr. J. W. Cox, Secretary Washington County -----	4 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
2	Dr. J. W. Cox, Secretary Washington County -----	2 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
4	Dr. Jno. Morris, Secretary Fayette County -----	4 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
6	Dr. E. C. Freeman, Secretary Giles County -----	2 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	18 00
6	Dr. J. W. Cox, Secretary Washington County -----	5 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
	(\$1.00 Medical Defense)		10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
10	Dr. J. L. Andrews, Secretary Shelby County -----	6 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
12	Dr. H. H. McCampbell, Secretary Knox County -----	2 00	10	Dr. W. Likely Simpson, Secretary Shelby County -----	20 00
12	Dr. J. A. Delaney, Secretary Sullivan County -----	8 00	10	Dr. G. F. Aycock, Secretary Davidson County -----	186 00
12	Dr. J. B. Haskins, Secretary Hamilton County -----	6 00	12	Dr. J. Y. Freeman, Secretary Macon County -----	18 00
16	Dr. J. A. Delaney, Secretary Sullivan County -----	10 00		(\$4.00 Medical Defense)	
16	Dr. J. F. Gallagher, Secretary Davidson County -----	8 00	12	Dr. T. J. Hickman, Secretary Loulon County -----	9 00
20	Dr. B. N. White, Secretary Rutherford County -----	2 00		(\$1.00 Medical Defense)	
23	Dr. J. T. Hayes, Secretary Anderson County -----	2 00	14	Dr. J. L. Edwards, Secretary Haywood County -----	14 00
December				(\$4.00 Medical Defense)	
8	Dr. E. C. Freeman, Secretary Giles County -----	2 00	14	Dr. F. M. Boyatt, Secretary Scott County -----	12 00
	(\$4.00 Medical Defense)			(\$4.00 Medical Defense)	
9	Dr. J. F. Gallagher, Secretary Davidson County -----	2 00	15	Dr. W. G. Saunders, Secretary Madison County -----	10 00
11	Dr. W. K. Edwards, Secretary Hickman County -----	2 00	18	Dr. B. T. Bennett, Assistant Secretary Gibson County -----	16 00
20	Dr. J. B. Haskins, Secretary Hamilton County -----	2 00		(Back dues, 1915-16)	
23	Dr. J. L. Andrews, Secretary Shelby County -----	4 00	18	Dr. F. M. Boyatt, Secretary Scott County -----	6 00
			18	Dr. G. F. Aycock, Secretary Davidson County -----	14 00

18	Dr. E. C. Freeman, Secretary Giles County -----	28 00	8	Dr. T. M. Roberts, Secretary Monroe County -----	3 00
20	Dr. B. M. Little, Secretary Montgomery County -----	25 00		(\$1.00 Medical Defense)	
20	Dr. W. Likely Simpson, Secretary Shelby County -----	14 00	9	Dr. H. Claude Guerin, Secretary Dickson County -----	14 00
20	Dr. J. D. Alexander, Secretary Lake County -----	16 00		(\$2.00 Medical Defense)	
22	Dr. F. M. Boyatt, Secretary Scott County -----	6 00	9	Dr. B. M. Little, Secretary Montgomery County -----	7 00
	(\$2.00 Medical Defense)			(\$1.00 Medical Defense)	
22	Dr. W. T. Bell, Secretary McNairy County -----	15 00	9	Dr. W. T. Bell, Secretary McNairy County -----	3 00
	(\$5.00 Medical Defense)			(\$1.00 Medical Defense)	
22	Dr. W. P. Allen, Secretary Rhea County -----	3 00	9	Dr. U. G. Jones, Secretary Anderson County -----	10 00
	(\$1.00 Medical Defense)		10	Dr. W. C. Brown, Secretary Chester County -----	8 00
24	Dr. A. B. Qualls, Secretary Overton County -----	16 00	11	Dr. E. E. Northcutt, Secretary Warren County -----	12 00
24	Dr. H. P. Larimore, Secretary Hamilton County -----	64 00		(\$2.00 Medical Defense)	
	(\$4.00, 1915 dues)		11	Dr. W. G. Saunders, Secretary Madison County -----	6 00
25	Dr. B. M. Little, Secretary Montgomery County -----	2 00	11	Dr. B. C. Dodds, Secretary Carroll County -----	24 00
	(\$2.00, 1915 dues)		14	Dr. C. P. Martin, Secretary Putnam County -----	21 00
26	Dr. H. H. McCampbell, Secretary Knox County -----	94 00		(\$1.00 Medical Defense)	
26	Dr. E. W. Mabry, Secretary Jackson County -----	14 00	14	Dr. M. A. Beasley, Secretary Maury County. (\$2.00, 1915 dues) -----	19 00
	(\$4.00 Medical Defense)			(\$1.00 Medical Defense)	
26	Dr. B. M. Little, Secretary Montgomery County -----	2 00	14	Dr. J. S. Lyons, Secretary Hawkins County -----	16 00
	(1915 dues)		19	Dr. B. Chas. Griffith, Secretary Coffee County -----	18 00
27	Dr. M. A. Beasley, Secretary Maury County -----	31 00		(\$4.00 Medical Defense)	
	(\$1.00 Medical Defense)		19	Dr. F. B. Reagor, Secretary Bedford County -----	42 00
27	Dr. W. G. Saunders, Secretary Madison County -----	12 00	19	Dr. E. W. Mabry, Secretary Jackson County -----	9 00
28	Dr. C. T. Carroll, Jr., Secretary Hamblen County -----	42 00		(\$3.00 Medical Defense)	
	(\$14.00 Medical Defense)		19	Dr. B. S. Rhea, Secretary Wilson County -----	22 00
28	Dr. B. F. Fyke, Secretary Robertson County -----	2 00		(\$4.00 Medical Defense)	
29	Dr. W. R. Irish, Secretary Campbell County -----	26 00	19	Dr. J. W. Sanford, Secretary Lauderdale County -----	48 00
				(\$2.00 Medical Defense)	
31	Dr. C. T. Carroll, Jr., Secretary Hamblen County -----	3 00	19	Dr. K. S. Howlett, Secretary Williamson County -----	27 00
	(\$1.00 Medical Defense)			(\$5.00 Medical Defense)	
February			19	Dr. T. J. Hickman, Secretary Loudon County -----	2 00
1	Dr. W. T. Bell, Secretary McNairy County -----	5 00	19	Dr. E. C. Freeman, Secretary Giles County -----	14 00
	(\$1.00 Medical Defense)		19	Dr. B. F. Fyke, Secretary Robertson County -----	4 00
2	Dr. W. R. Irish, Secretary Campbell County -----	2 00	19	Dr. W. K. Edwards, Secretary Hickman County -----	14 00
2	Dr. W. G. Saunders, Secretary Madison County -----	2 00	19	Dr. G. F. Aycock, Secretary Davidson County -----	30 00
3	Dr. H. H. McCampbell, Secretary Knox County -----	22 50		(\$2.00, 1915 dues)	
4	Dr. T. J. Hickman, Secretary Loudon County -----	2 00	19	Dr. T. J. Hickman, Secretary Loudon County -----	2 00
4	Dr. W. Likely Simpson, Secretary Shelby County -----	6 00	21	Dr. W. T. Bell, Secretary McNairy County -----	3 00
5	Dr. W. K. Vance, Secretary Sullivan County -----	11 00		(\$1.00 Medical Defense)	
	(\$1.00 Medical Defense)		22	Dr. W. G. Saunders, Secretary Madison County -----	4 00
5	Dr. E. LeRoy Wilkins, Secretary Dyer County -----	59 00	22	Dr. E. W. Mabry, Secretary Jackson County -----	3 00
	(\$15.00 Medical Defense)			(\$1.00 Medical Defense)	
7	Dr. H. P. Larimore, Secretary Hamilton County -----	20 00	22	Dr. E. W. Mabry, Secretary Jackson County -----	3 00
7	Dr. G. C. G. Givan, Secretary Roane County -----	28 00		(\$1.00 Medical Defense)	
	(\$4.00 Medical Defense)		23	Dr. Samuel T. Parker, Secretary Henderson County -----	51 00
8	Dr. W. T. Bell, Secretary McNairy County -----	4 00		(\$3.00 Medical Defense)	

24	Dr. W. G. Saunders, Secretary Madison County -----	2 00	17	Dr. W. C. Brown, Secretary Chester County -----	2 00
24	Dr. J. W. Sanford, Secretary Lauderdale County -----	2 00	17	Dr. K. S. Howlett, Secretary Williamson County -----	8 00
25	Dr. Jno. Morris, Secretary Fayette County -----	3 00		(\$2.00 Medical Defense)	
25	Dr. Jno. Morris, Secretary Fayette County -----	2 00	18	Dr. W. G. Saunders, Secretary Madison County -----	18 00
28	Dr. E. LeRoy Wilkins, Secretary Dyer County -----	6 00	18	Dr. G. F. Aycock, Secretary Davidson County -----	14 00
March			18	Dr. B. T. Bennett, Secretary Gibson County -----	71 00
2	Dr. W. W. Hill, Secretary Roane County -----	7 00		(\$19.00 Medical Defense)	
	(\$1.00 Medical Defense)		18	Dr. K. S. Howlett, Secretary Williamson County -----	2 00
2	Dr. W. R. Irish, Secretary Campbell County -----	10 00	20	Dr. F. B. Reagor, Secretary Bedford County -----	2 00
2	Dr. E. W. Mabry, Secretary Jackson County -----	3 00	20	Dr. H. P. Larimore, Secretary Hamilton County -----	38 00
	(\$1.00 Medical Defense)			(\$2.00, 1915 dues)	
6	Dr. H. P. Larimore, Secretary, Hamilton County -----	12 00	20	Dr. M. A. Beasley, Secretary Maury County -----	2 00
	(\$2.00, 1915 dues)		20	Dr. T. E. Sawyer, Secretary Weakley County -----	21 00
7	Dr. T. A. Patrick, Secretary Lincoln County -----	50 00		(\$7.00 Medical Defense)	
7	Dr. J. H. McSwain, Secretary Henry County -----	31 00	20	Dr. B. M. Little, Secretary Montgomery County -----	3 00
	(\$3.00 Medical Defense)			(\$1.00 Medical Defense)	
8	Dr. Jno. Morris, Secretary Fayette County -----	3 00	21	Dr. W. K. Vance, Secretary Sullivan County -----	4 00
	(\$1.00 Medical Defense)		22	Dr. J. W. Sanford, Secretary Lauderdale County -----	2 00
8	Dr. Jno. Morris, Secretary Fayette County -----	6 00	22	Dr. J. D. Carlton, Secretary Obion County -----	2 00
8	Dr. H. H. McCampbell, Secretary Knox County -----	48 00	23	Dr. J. L. Edwards, Secretary Haywood County -----	4 00
8	Dr. J. W. Rogers, Secretary Sevier County -----	16 00	23	Dr. W. R. Irish, Secretary Campbell County -----	2 00
9	Dr. T. J. Hickman, Secretary Loudon County -----	2 00	23	Dr. W. W. Hill, Secretary Roane County -----	3 00
9	Dr. S. T. Hardison, Secretary Marshall County -----	58 00		(\$1.00 Medical Defense)	
	(\$12.00 Medical Defense)		23	Dr. J. W. Cox, Secretary Washington County -----	75 00
10	Dr. W. T. Bell, Secretary McNairy County -----	3 00		(\$15.00 Medical Defense)	
	(\$1.00 Medical Defense)		23	Dr. H. H. McCampbell, Secretary Knox County -----	40 00
10	Dr. W. Likely Simpson, Secretary Shelby County -----	18 00	24	Dr. V. L. Lewis, Secretary Cumberland County -----	12 00
11	Dr. T. J. Hickman, Secretary Loudon County -----	2 00	24	Dr. G. F. Aycock, Secretary Davidson County -----	6 00
11	Dr. W. P. Allen, Secretary Rhea County -----	21 00	25	Dr. M. A. Beasley, Secretary Maury County -----	2 00
	(\$7.00 Medical Defense)		25	Dr. B. S. Rhea, Secretary Wilson County -----	5 00
11	Dr. M. A. Beasley, Secretary Maury County -----	10 00		(\$1.00 Medical Defense)	
14	Dr. Ed Culp, Secretary Wayne County -----	10 00	25	Dr. E. C. Freeman, Secretary Giles County -----	8 00
14	Dr. W. K. Vance, Secretary Sullivan County -----	18 00	25	Dr. H. Claude Guerin, Secretary Dickson County -----	4 00
15	Dr. E. W. Cocke, Secretary Hardeman County -----	26 00	27	Dr. R. C. Gaw, Secretary Jackson County -----	6 00
15	Dr. M. E. Rust, Secretary Fayette County -----	6 00		(\$2.00 Medical Defense)	
15	Dr. M. A. Blanton, Secretary Greene County -----	47 00	27	Dr. E. LeRoy Wilkins, Secretary Dyer County -----	14 00
	(\$3.00 Medical Defense)			(\$4.00 Medical Defense)	
16	Dr. S. T. Parker, Secretary Henderson County -----	5 00	27	Dr. W. C. Brown, Secretary Chester County -----	2 00
	(\$1.00 Medical Defense)		27	Dr. H. H. McCampbell, Secretary Knox County -----	16 00
16	Dr. H. Claude Geurin, Secretary Dickson County -----	7 00	28	Dr. L. J. Lindsay, Secretary Tipton County -----	32 00
	(\$1.00 Medical Defense)			(10.00 Medical Defense)	
17	Dr. W. T. Bell, Secretary McNairy County -----	9 00	28	Dr. L. E. Ragsdale, Secretary Dr. Beasley -----	2 00
	(\$3.00 Medical Defense)		28	Dr. W. K. Vance, Secretary Sullivan County -----	2 00
17	Dr. J. D. Carlton, Secretary Obion County -----	12 00			

28	Dr. W. R. Irish, Secretary Campbell County	6 00
28	Dr. C. P. Martin, Secretary Putnam County	9 00
	(\$3.00 Medical Defense)	
29	Dr. Edwin W. Cocke, Secretary Harde- man County	2 00
29	Dr. Jno. T. Grisard, Secretary Frank- lin County	20 00
30	Dr. H. H. McCampbell, Secretary Knox County	2 00
31	Dr. Jno. P. Grisard, Secretary Frank- lin County	2 00
31	Dr. H. P. Larimore, Secretary Ham- ilton County	24 00
	(\$4.00, 1913 and 1914 dues)	
31	Dr. M. A. Beasley, Secretary Maury County	4 00
31	Dr. W. C. Brown, Secretary Chester County	4 00
31	Dr. B. C. Dodds, Secretary Carroll County	20 00
31	Dr. Ed Culp, Secretary Wayne County	2 00
31	Dr. J. R. Nankivelle, Secretary Mc- Minn County	24 00
31	Dr. E. H. Jones, Secretary Rutherford County	51 00
	(\$5.00 Medical Defense)	
31	Dr. J. M. Crider, Secretary Decatur County	12 00
31	Dr. M. A. Blanton, Secretary Greene County	2 00
31	Dr. M. A. Blanton, Secretary Greene County	4 00
31	Dr. C. F. Crowder, Secretary Blount County	12 00
	Total membership cash	\$3,899 50
	Total 1913 dues	\$ 2 00
	Total 1914 dues	\$ 4 00
	Total 1915 dues in 1916	\$ 16 00
	Total Medical Defense	\$ 325 00

TREASURER'S REPORT.

ADVERTISING CASH FOR 1915-1916.

April, 1915.

1	City View Sanitarium	\$ 5 00
1	Tulane Operating Co.	4 00
1	Wiles Bros. & Co.	4 00
1	Dr. Broughton's Sanitarium	2 92
2	Weder Manufacturing Co. (exhibit)	10 00
5	Dr. Katherine L. Storm	2 50
5	City View Sanitraium	2 50
7	Southern Ice Co.	10 00
7	Womack-Waldrum Drug Co.	8 00
7	Theo. Tafel Co.	5 00
8	Dr. A. Weil (subscription)	2 00
9	W. C. Raesfield Co. (on account)	1 50
9	Parke, Davis & Co.	7 13
9	Jensen, Herzer & Jeck	4 00
9	E. R. Squibb & Sons	2 77
10	Nashville Distilling Co.	4 00
12	Phillips-Trawick Co.	4 00
12	Co-operative Med. Adv. Bureau	39 29
12	Abbott Alkaloidal Co.	5 42
15	The Oxford Retreat	2 50
15	Diehl & Lord	11 00
15	Dorris, Karsch & Co.	29 97
15	H. K. Mulford & Co.	9 50
15	Lederle Antitoxin Lab. (exhibit space)	15 00
16	Maxwell Operating Co.	4 00
16	Southern Star Laundry	3 92
16	The University of Tennessee	15 00
16	F. A. Hardy & Co.	5 00
17	Fairchild Bros. & Foster	15 00

20	Hotel Hermitage	8 00
21	Armour & Co.	8 33
21	Massengale Advertising Agency	5 15
21	Winter Auto Livery Co.	12 00
21	Theo. Tafel Co. (exhibit space)	15 00
22	Woman's Hospital	5 42
23	Battle Creek Sanitarium (check from Foute)	32 80
23	Fairchild Bros. & Foster	15 00
23	Nurses' Registry	10 00
24	Southern Ice Co.	10 00
26	Cincinnati Sanitarium	5 00
27	Dr. Goetz (ad. in one issue)	5 00
May		
1	Cheek-Neal Coffee Co.	3 00
3	Dr. Broughton's Sanitarium	2 92
3	Wiles Bros. & Co.	4 00
3	A. N. Eshman (advertising)	4 00
3	Lynnhurst Sanitarium	7 50
5	Robert Lyle	8 00
5	Tulane Operating Co.	4 00
6	Theo. Tafel Co.	5 00
7	E. R. Squibb & Sons	2 77
	County	10 00
13	Dr. M. E. Rust, Secretary Fayette	
7	T. F. Long (advertisement)	1 00
7	Dr. Katherine L. Storm	2 50
10	Paul & John Stumb	12 00
10	Drs. Lewis & Blue	4 00
10	Drs. Petty & Wallace	7 50
10	Parke, Davis & Co.	7 13
11	Ambrose Printing Co. (balance due after overcharge)	1 97
11	Skalowski's	4 00
12	Co-operative Med. Adv. Bureau	36 75
12	Castner-Knott Dry Goods Co.	6 50
12	Nashville Buick Co.	12 00
13	Diehl & Lord	7 50
13	Deeds, Jordan Buggy Co.	15 00
15	H. K. Mulford Co.	9 50
19	Newsum Tire & Rubber Co.	8 00
19	The Abbott Alkaloidal Co.	5 42
20	Hermitage Hotel	4 00
20	Oxford Retreat	2 50
20	Southern Ice Co.	10 00
21	Jensen, Herzer & Jeck	4 00
21	Armour & Co.	8 33
21	L. & N. Railway Co.	13 00
25	Woman's Hospital	5 42
25	Maxwell House	4 00
26	Fairchild Bros. & Foster	7 50
26	Cincinnati Sanitarium	5 00
29	Dr. S. M. Miller (Journal copies)	7 00
29	Vulcan Coil Co.	15 00

June

2	Nashville Distilling Co.	4 00
3	Dr. Broughton's Sanitarium	2 92
3	Sarah James Hospital	7 50
4	Dr. T. O. Burger (subscription)	2 00
4	City View Sanitarium	10 00
7	Dr. Katherine L. Storm	2 50
7	Armour & Co.	8 33
7	E. R. Squibb & Sons	2 77
9	Dr. B. S. Wert (Journals)	1 56
10	Phillips-Trawick Co.	4 00
11	Joseph Millinery	8 00
11	Parke-Davis & Co.	7 13
11	Co-operative Med. Adv. Bureau	45 94
12	Vanderbilt University	30 00
14	Oxford Retreat	2 50
14	Dr. S. M. Miller (May Journals)	1 50
16	Southern Star Laundry	8 00
16	F. A. Hardy & Co.	10 00
17	Woman's Hospital	5 42
21	H. K. Mulford Co.	9 50
21	Abbott Alkaloidal Co.	5 42

21	Massengale Adv. Agency	5 15	9	Carter-Hough Tent & Awning Co. ..	8 00
23	Nashville Surgical Supply Co.	47 52	12	Ambrose Printing Co.	6 66
25	Theo. Tafel Co.	5 00	12	Southern Ice Co.	10 00
26	Cincinnati Sanitarium	5 00	12	Co-operative Med. Adv. Bureau	46 88
July			13	H. K. Mulford Co.	9 50
2	Southern Ice Co.	10 00	13	Parke, Davis & Co.	7 13
3	City View Sanitarium	5 00	14	Lynnhurst Sanitarium	15 00
5	Dr. Broughton's Sanitarium	2 92	16	Woman's Hospital	5 42
7	Dr. Katherine L. Storm	2 50	16	Fairchild Bros. & Foster	7 50
8	New Orleans Polyclinic	15 00	16	Oxford Retreat	2 50
9	Oxford Retreat	2 50	18	F. A. Hardy & Co.	10 00
9	E. R. Squibb & Sons	2 77	18	Armour & Co.	7 00
10	Parke, Davis & Co.	7 13	18	The Abbott Alkaloidal Co.	5 42
12	Co-operative Med. Adv. Bureau	39 59	23	Harry J. Frahn	4 00
12	Drs. Lewis & Blue	4 00	25	Cincinnati Sanitarium	5 00
13	Southern Star Laundry	4 00	28	Southern Ice Co.	10 00
14	Ambrose Printing Co.	6 66	November		
14	Armour & Co.	8 33	2	Theo. Tafel Co.	5 00
15	Carter-Hough Tent & Awning Co....	12 00	3	Drs. Petty & Wallace	7 50
19	Woman's Hospital	5 42	4	Oxford Retreat	2 50
24	Nashville Baking Co.	11 64	4	Dr. Broughton's Sanitarium	2 92
24	Lynnhurst Sanitarium	10 00	6	E. R. Squibb & Sons	2 77
24	Fairchild Bros. & Foster	7 50	8	Katherine L. Storm	2 50
24	Fairchild Bros. & Foster	7 50	8	Parke, Davis & Co.	7 13
24	Cincinnati Sanitarium	5 00	8	Armour & Co.	7 00
28	Southern Ice Co.	10 00	10	Ambrose Printing Co.	3 33
28	Geo. S. Johnson & Co.	64 98	11	Drs. Lewis & Blue	4 00
August			11	Co-operative Med. Adv. Bureau	63 35
2	C. V. Mosby Co. (exhibit space)	12 50	15	Woman's Hospital	5 42
2	Drs. Petty & Wallace	7 50	18	F. A. Hardy & Co.	5 00
3	Dr. Broughton's Sanitarium	2 92	18	H. K. Mulford Co.	9 50
5	Vulcan Coil Co.	4 00	27	The Cincinnati Sanitarium	5 00
6	Parke, Davis & Co.	7 13	29	Fairchild Bros. & Foster	7 50
6	Dr. Katherine L. Storm	2 50	30	Southern Ice Co.	10 00
9	E. R. Squibb & Sons	2 77	December		
10	Ambrose Printing Co.	3 33	2	Dr. Broughton's Sanitarium	2 92
11	H. K. Mulford Co.	9 50	6	E. R. Squibb & Sons	2 77
11	Theo. Tafel Co.	10 00	9	Parke, Davis & Co.	7 13
11	Co-operative Med. Adv. Bureau	47 20	11	Dr. Katherine L. Storm	2 50
16	Woman's Hospital	5 42	11	Oxford Retreat	2 50
16	The Abbott Alkaloidal Co.	5 42	14	Armour & Co.	7 00
16	Armour & Co.	7 00	14	Co-operative Med. Adv. Bureau	61 00
17	F. A. Hardy & Co.	10 00	14	Theo. Tavel Co.	5 00
23	Southern Ice Co.	10 00	14	Ambrose Printing Co.	3 33
24	Oxford Retreat	2 50	16	Fairchild Bros. & Foster	7 50
25	Cincinnati Sanitarium	5 00	17	F. A. Hardy & Co.	5 00
28	Fairchild Bros. & Foster	7 50	18	Woman's Hospital	5 42
September			20	H. K. Mulford Co.	9 50
1	City View Sanitarium	10 00	31	Cincinnati Sanitarium	5 00
3	Dr. Broughton's Sanitarium	2 92	January, 1916.		
3	The Eat Shop	4 00	3	Southern Ice Co.	10 00
3	Geo. R. Calhoun	12 00	3	Geo. S. Johnston Co.	32 49
3	Tolmie's	12 00	5	City View Sanitarium	15 00
3	Dr. Jessie A. Sanders (card space)....	5 00	6	Dr. A. B. Cook (card space)	5 00
4	Dr. T. O. Burger (card space)....	5 00	6	Dr. Broughton's Sanitarium	2 92
4	Dr. Katherine L. Storm	2 50	8	Dr. J. Blair Cross (subscription)....	2 00
4	E. R. Squibb & Sons	2 77	10	Dr. Katherine L. Storm	2 50
9	Woman's Hospital	5 42	11	Drs. Lewis & Blue	4 00
9	Drs. Lewis & Blue (\$6.00 check, \$2.00 Medical Defense)	4 00	11	Co-operative Med. Adv. Bureau	56 59
10	Abbott Alkaloidal Co.	5 42	12	Parke, Davis & Co.	7 13
13	Co-operative Med. Adv. Bureau	47 96	14	E. R. Squibb & Sons	2 78
13	Armour & Co.	7 00	14	Woman's Hospital	5 42
13	Oxford Retreat	2 50	14	Fairchild Bros. & Foster	7 50
13	Fairchild Bros. & Foster	7 50	18	H. K. Mulford Co.	9 50
13	Strand Theater	8 00	18	Armour & Co.	7 00
14	W. G. Hirsig Co.	12 00	20	Lynnhurst Sanitarium	15 00
15	H. K. Mulford Co.	9 50	21	Oxford Retreat	2 50
15	Parke, Davis & Co.	7 13	21	F. A. Hardy & Co.	5 00
25	Cincinnati Sanitarium	5 00	22	Southern Ice Co.	10 00
October			25	Cincinnati Sanitarium	5 00
4	City View Sanitarium	5 00	26	Theo. Tafel Co.	5 00
6	Dr. Broughton's Sanitarium	2 92	26	Orchard Springs Sanitarium	15 00
7	E. R. Squibb & Sons	2 77	10	Ambrose Printing Co.	3 33
9	Dr. Katherine L. Storm	2 50	February		
9	Theo. Tafel Co.	10 00	2	Drs. Petty & Wallace	7 50
			6	City View Sanitarium	5 00

7	Dr. Katherine L. Storm -----	2 50
8	Oxford Retreat -----	2 50
9	Armour & Co. -----	7 00
9	Co-operative Med. Adv. Bureau-----	63 86
16	F. A. Hardy & Co. -----	5 00
19	H. K. Mulford Co. -----	9 50
19	Woman's Hospital -----	5 42
25	Southern Ice Co. -----	10 00
25	Cincinnati Sanitarium -----	5 00
March		
1	Fairchild Mros. & Foster -----	7 50
2	City View Sanitarium -----	7 50
3	Vulcan Coil Co. -----	16 50
4	Theo. Tafel Co. -----	10 00
6	Dr. Broughton's Sanitarium -----	2 92
8	E. R. Squibb & Sons (Jan. and Feb.)	5 55
9	Co-operative Med. Adv. Bureau ----	64 18
10	Ambrose Printing Co. -----	3 33
13	Woman's Hospital -----	5 42
13	Dr. Katherine L. Storm -----	2 50
13	Parke, Davis & Co. -----	14 25
13	Armour & Co. -----	7 00
14	Oxford Retreat -----	2 50
14	Geo. S. Johnston Co. -----	32 49
16	F. A. Hardy & Co. -----	5 00
20	H. K. Mulford Co. -----	9 50
20	Nashville Surgical Supply Co. -----	48 78
22	One year's subscription—Dr. Dovey--	2 00
24	Cincinnati Sanitarium -----	5 00
27	Fairchild Bros. & Foster -----	7 50
30	Southern Ice Co. -----	10 00
31	Carter-Hough Tent & Awning Co. ----	4 00
31	Rich Printing Co. -----	37 94

Total advertising cash -----\$2,585 23

Audited and found correct:

G. P. ZIRKLE,
WM. BRITT BURNS,
J. F. GALLAGHER,
Auditing Committee.

The Chairman: Gentlemen, you have heard the report of the Treasurer; what is your pleasure?

A Member: I move the acceptance of the report and that it be referred to the Auditing Committee. Seconded.

The Chairman: You have heard the motion that the report be accepted and referred to the Auditing Committee; we have no regular auditing committee, so that carries with it the instruction of appointing an auditing committee. Is there any discussion; if not, all in favor of the motion make it known by saying "aye."

Carried.

The Chairman: I will appoint Dr. Zirkle, Dr. Burns and Dr. Gallagher to audit the Treasurer's report.

The Chairman: The next order of business is the report of the representative of the Legislative Council.

The Secretary: He is not in the hall.

The Chairman: He is at the meeting in the other hall.

The Chairman: The next order of business is the report of delegates to the American Association, Dr. Bromberg and Dr. Crook.

The Secretary: They have gone out.

The Chairman: The next order of business is the report of the Board of Trustees.

A Member: Mr. Chairman, we haven't had a meeting as yet, and we would like to defer that until we can meet.

The Chairman: The next order of business is the report of the Councilors by Districts. The First District, Dr. C. P. Fox. Is he present?

A Member: He is not present, doctor.

The Chairman: Dr. S. R. Miller?

Dr. Broyles: A special order is on in the other hall, I think now. There is something on that is pretty attractive to our body here (several members leaving the room). Can't we adjourn and have a little earlier meeting this afternoon?

A Member: I suggest that we go ahead with the Councilors' report.

The Chairman: The House of Delegates is supposed to meet from 8 to 9 and it is 9 o'clock

A Member: I move then that we adjourn.

A Member: We have had no meeting of the Nominating Committee, and I suggest that they meet in this hall.

The Chairman: There is a motion to adjourn. Seconded.

The Chairman: All in favor of the motion will signify it by saying "aye." Carried.

Adjourned until 2 o'clock p. m.

Wednesday Afternoon, 2 O'Clock P. M.

The House of Delegates convened pursuant to adjournment.

The Chairman: The House of Delegates will please come to order. Is Dr. Brooks in the room? He was a delegate to the National Legislative Council. (No response.) Then we will call for the delegates from the American Medical Association, Dr. Bromberg and Dr. Crook.

Dr. Crook: The full account of the meeting of the American Medical Association has been published in the Minutes of the American Medical Association Journal, and I presume it is hardly necessary to go into it. I

want to say, however, that the President of the American Medical Association took occasion to assert that the State of Tennessee had one of the best medical laws to be found in the United States, and also called attention to the fact that she was to be commended for securing this legislation. The President, Dr. Rodman, as you all know, defended the National Examining Committee, which I believe will soon be finally created. The detail work of the American Medical Association has already been published, and unless there are some particular questions to be asked, I don't think I will take up the time of the House of Delegates by going into those details.

The Chairman: What is your pleasure in regard to this report, gentlemen?

A Member: I move that it be received
Seconded.

The Chairman: It has already been received, but let it be accepted and filed. All in favor of the motion signify it by saying "aye."
Carried.

The Chairman: Presently you will remember that the term of office of one of our delegates expires, and we will have occasion later to elect his successor, or elect a delegate.

The next order of business is the report of the Board of Trustees. I think Dr. Cowden had that in hand. I expect he is out sitting with the Auditing Committee. We will pass that.

The next order of business is the report of the Councilors by Districts. Dr. Fox, of Greeneville, is the Councilor for the First District.

Dr. Reagor: Mr. Chairman, do you expect a discussion of the Councilors' reports. I didn't understand it that way.

The Chairman: This is the report of the Councilors by Districts, the way it is in the Order of Business.

Dr. Reagor: It is usually customary for the Chairman of the Board of Councilors to make a report for the entire Council.

Dr. Richards: The Board of Councilors met last year and organized after the state meeting had adjourned, and in their organization they elected me as Chairman of the Board of Councilors, and my recollection is that they made it obligatory upon me to correspond with

all of the Councilors, and to receive their reports and make a condensed report of all the Councilors, so I set about to do that and in a way have done that. However, I would like to suggest, Mr. Chairman, that the Councilors who are here make their detailed report, and then those who are not here, whose reports I have at hand, I will make. Dr. Fox was here this forenoon, but said he didn't think he would be here this afternoon. His report consists of the following facts:

REPORT OF COUNCILORS.

Dr. C. P. Fox, Greeneville, Councilor for First District.

REPORT FOR 1915-16.

Counties	Number of Members	Number of Physicians	Number of Meetings	Number Papers Read	No. Visits Councilors
Sullivan -----	--	--	--	--	--
Carter -----	42	47	12	12	1
Johnson -----	--	--	--	--	--
Hawkins -----	11	*	12	0	1
Green -----	27	34	10	20	9

*Not given.

DR. C. P. FOX, Councilor.

Dear Doctor: I have delayed this report in an endeavor to get a report from the Secretary of the Washington County Society. Although I have written him three or four times urging him to make a report, I cannot hear from him. None of the other counties in my district are organized. If I get report from Washington County will send it to you later. You will observe the Sullivan, Carter and Johnson have a joint society.

Fraternally,

C. P. FOX.

Dr. Richards: (After having read report) stated:

Now these are all the reports and information I have in hand. Dr. Farmer, of the Fourth District, came make a report of that District. Then Dr. Gallagher—his report is not in my hands—from the Nashville District.

Dr. Farmer: Mr. Chairman, this is the first time I ever acted as Councilor and I had an idea I had to give rather a detailed report of all the work I did, and if you are willing to hear me, I would like to read it. I think these other Councilors would like to hear from their brother doctors.

The Chairman: Let's hear it, doctor.
Dr. Farmer reading report.

Report of W. S. Farmer, Councilor Fourth Congressional District.

Mr. Chairman:

On the 29th of November, 1915, I received a letter from Dr. A. F. Richards urging a report from the Fourth Congressional District as early as possible after the first of January, 1916.

So, during the last days of December, 1915, I sent out letters of inquiry to the fourteen counties in my district, thinking they would receive them about the first of January, 1916. I hoped that County Secretaries addressed had made New Year resolutions and I would have an early reply, but in this I was mistaken, for I only had one prompt reply, that being from Secretary of Smith County Medical Society. After waiting a number of days I sent out another batch of letters to the various County Secretaries begging for reports, with only two or three replies. This being my first experience as Councilor I felt somewhat disappointed, but I determined to have a report from each county, so I kept up an incessant fire at our County Secretaries until I heard from each county in my district. The time required to hear from the various secretaries in the Fourth Congressional District consumed all the time from the last days of December, 1915, to March 5, 1916—two months and five days to hear from a brother physician whose distance from me (living near the center of the district) was from twenty to one hundred miles. This is "going some" in these days of rapid transit.

One county, after writing to two or three different physicians, failed to answer, and one of my letters happened to fall in the hands of a Justice of the Peace and the tone of my letter appeared so pitiful, he kindly answered it and gave me the desired information as best he could, which was a great deal of help to me, as I sent a self-addressed envelope to physicians named in his letter and finally got the desired information. In several instances I sent a self-addressed envelope before any reply.

Tabulated report as follows:

Counties	Number of Members	Number of Physicians	Number of Meetings	Number Papers Read	No. Visits Councilors	Remarks
Smith	16	30	11	19	0	*
Jackson	15	18	12	12	0	--
Putnam	17	28	9	8	**	--
Cumberland	5	8	3 or 4	2	--	--
Fentress	8	9	4	0	0	***
Sumner	13	34	6	6	0	--
Wilson	14	40	10	8	0	--
Trousdale	0	†	0	0	0	†
Morgan	6	10	2	2	0	--
Overton	12	15	5	6	0	--
Pickett	0	5	0	0	0	x
Rhea	18	28	3	3	0	--
Clay	0	11	0	0	0	xx
Macon	7	10	10	12	0	--
Total	131	249	75	78	0	--

*Average attendance, 10.

**None except W. S. F. †No organization.
***Only organized. xNo Society.
†7 Reg. and 1 elected. xxNo organization.

From this you will see that we have 249 physicians in the fourth Congressional District. In this district, no organization in three counties. Trousdale, which has seven regular and one eclectic—Pickett with only five physicians, and Clay with eleven physicians—and we might add as a fourth, Fentress with nine physicians, but no papers read during 1915, time being taken up in informal discussions, and no organization for year 1916. Out of 249 physicians only 131 members of the county societies, leaving 118 non-affiliates, or nearly one-half of the physicians of the fourth Congressional District not only not members of county societies, but, as I understand the matter, debarred from membership in the State and National Associations. There was a total of 75 county meetings in the fourth Congressional District last year, with 78 papers, or a little over one paper to each meeting. This is a fair record, for if at every meeting of our county societies one subject was properly threshed out and understood by all present, medicine would make a rapid stride. But to think that one-half of the physicians of any district in the state took so little interest in their profession as shown by this report is enough to cause no surprise when some cancer quacks or Indian herb doctor locate among us and have good picking.

Some of you may be thinking "What about the Councilor of the Fourth District?" The report shows that he did not visit any of the counties named above. Last summer I was so busy and being away in New York for a few weeks I put off visiting the county societies until winter, and when winter came la grippe came and I could not go, but if the Lord lets me live I hope to make a better report one year hence, for I hope at least to visit these unorganized counties before another meeting of our State Society.

Respectfully submitted,

W. SCOTT FARMER,
Councilor Fourth Congressional District.

Dr. A. F. Richards, Sparta, Councilor for Third District.

REPORT FOR 1915-16.

Counties	Number of Members	Number of Physicians	Number of Meetings	Number Papers Read	No. visits Councilors	Remarks
Hamilton	115	145	50	44	0	*
Grundy	7	16	3	0	0	--
Polk	10	20	7	0	0	--
Warren	6	16	4	3	0	--
White	14	18	12	11	12	**
Bledsoe	--	--	--	--	--	***
Bradley	--	--	--	--	--	***
Franklin	--	--	--	--	--	***
James	--	--	--	--	--	***
Marion	--	--	--	--	--	***
McMinn	--	--	--	--	--	***
Melgs	--	--	--	--	--	***
Monroe	--	--	--	--	--	***
Sequatchie	--	--	--	--	--	***

*Average attendance, 42.

**Attendance, 9.

***No report

Dr. S. R. Miller, Knoxville, Councilor for Second District.
REPORT FOR 1915-16.

Counties	Legalized Practitioners in County	Members	Eligible Non-Members	Meetings in Year	Scientific Papers Read	Average Attendance	New Members	Members Died	Members Living and Dropped	Paid Medical Defense
Anderson	19	18	1	12	20	8	5	0	0	11
Blount	1	6			--	--	6	0	0	1
Campbell	37	23	20	D. K.	D. K.	D. K.	7	0	2	1
Hamblen	19	15	4	12	15	8	1	1	0	15
Jefferson	25	20	5	7	10	7	1	0	0	13
Louden	18	14	0	12	8	9	1	1	0	1
Knox	150	119	6 (city)	50	49	30 plus	10	1	4	64
Roane	30	15	10	12	15	9½	2	0	0	6
Scott	--	--	--	--	--	--	--	--	--	--
Union	--	--	--	--	--	--	--	--	--	--

Dr. F. B. Reagor, Shelbyville, Councilor for Fifth District.
REPORT FOR 1915-16.

Counties	Number of Members	Number of Physicians	Number of Meetings	Number Papers Read	No. Visits Councilors	Remarks
Bedford	23	40	12	12	--	--
Coffee	8	18	3	3	1	--
Lincoln	27	38	10	9	1	*
Marshall	23	26	12	12	1	--
Rutherford	--	--	--	--	--	--

*Average attendance, 11.

I cannot get an organization in DeKalb nor Cannon, and am holding this report to get a hearing from Rutherford. I have written the Secretary three times and not a line yet. I have had to write to all of them the third time, and hence my delay in writing this to you.

Dr. L. E. Wheat, Brick Church, Councilor for the Seventh District.
REPORT FOR 1915-16.

Counties	Number of Members	Number of Physicians	No. Visits Councilors	Number of Meetings	Number Papers Read	No. Visits Councilors	Remarks
Giles	19	39 (4 col.)	12	12	--	--	*
Maury	25	41	--	--	--	--	--
Wayne	--	--	--	--	--	--	**
Dickson	11	22 (2 col.)	--	--	--	--	***
Williamson	14	22	--	--	x	--	xx
Lawrence	12	--	--	--	--	--	xxx
Lewis	--	--	--	--	--	--	!

*Three members; two new applications.

**Not organized. Need some help.

***Average attendance, 7 inaccessible.

xMeet once a month.

xxFour new applications. Good general condition.

xxxNot organized. !Not organized. No prospects.

Dr. A. B. Dancy, Jackson, Councilor for Eight District.
REPORT FOR 1915-16.

Counties	Physicians in County	Number in Society	Eligible Non-Members	No. Society Meetings	Average Attendance	No. Scientific Papers Read	No. visits Councilors
xxBenton	16-20	6	10	1	6	0	0
Carroll	35	25	10	*	10	**	0
Chester	11	7	4	***	--	--	--
Decatur	x	xx	--	--	--	--	--
Hardin	24	12	12	--	12	--	--
Henderson	24	23	--	xxx	12	--	--
Henry	32	6	--	!	--	--	--
McNairy	30	18	12	!!	--	--	--
Madison	63	28	!!!	--	18	20	--
Perry	11	--	--	--	--	--	--

*Bi-monthly.

**No report.

***Twice a month.

xSee report.

xxNo organization.

xxxMonthly.

!None in six years.

!!No report.

!!!Nineteen non-eligible.

Dr. Beasley: I am from Maury county. I am secretary of the county society. I don't know where our Councilor received his report from Maury county. I just want to say this in self-defense as secretary of the society. I didn't know that this report was required. I am sorry that I didn't. I would like to make a report and I will remember it next year. I am glad to say, in the way of a correction, that we now have thirty-eight paid-up members in Maury county and we have discarded all those

in arrears. We had nine meetings in our county. We had nine papers. At present we have had a meeting every month and have had two visiting physicians with us. I would like to add that we have never had a visit from our Councilor in Maury county.

The Chairman: (To Dr. Beasley): What District are you in?

Dr. Beasley: I am in the Seventh District.

The Chairman: Dr. Gallagher have you any report from your District?

Dr. Gallagher: I have none very different from that of last year. That is, my district is composed of four counties, three of which are organized and one is not organized, and not likely to be organized. The American Medical Organizer has recently visited my district and has stimulated to greater activity two counties under the plan of education by the American Medical Association. Davidson County is the county in which Nashville is located, and last year had the largest medical society it has ever had.

Dr. Lockhart: The Councilor from our district—Dr. Richards—I have either made a mistake or he has made one. He has stated that there were sixteen physicians in Grundy and there are only eight members. He said that I had reported sixteen physicians in the county. Dr. Farrar was a member of our society and he has been transferred to Coffee, leaving us nine members eligible for membership. But I have the report on file.

Dr. Richards: I may have read the figures wrong. The report is there and will show up correctly.

The Chairman: Is Dr. L. E. Wheat, Councilor from the Seventh District, here? (No response).

The Chairman: The Ninth District; Dr. T. B. Wingo, of Martin? (No response).

The Chairman: The Tenth District, Dr. J. L. Andrews? (No response).

The Chairman: What is your pleasure, gentlemen, with regard to the reports of the Councilors?

A Member: I move that they be spread upon the minutes. (Motion seconded).

The Chairman: The motion has been made and seconded that these reports of the Councilors be received and spread on the minutes; all

in favor of that make it known by saying "aye." (Carried).

The Chairman: Doctor, to revert to the reports of some of the standing committees, the Committee on Public Policy and Legislation; Dr. Price was not present when we called that committee before.

Dr. Price: Mr. Chairman and Gentlemen of the House of Delegates, the committee desires the present the following report:

Knoxville, Tenn., April 4-6, 1916.

To the House of Delegates, Tennessee State Medical Association.

Gentlemen:

Your Committee on Public Policy and Legislation herewith present the result of its consideration of such matters as have been presented to it at this meeting.

Our attention was called to the present status of the case of State vs. one J. S. Anderson, the decision in which case, before the Court of Civil Appeals, was lately rendered by Judge Higgins, and has been published in the official Journal of the State Association. In this connection we desire to call attention to the fact that the expense of this litigation has fallen largely upon the medical profession of Roane County. From a consideration of the expense account of this litigation it is evident that Mr. Littleton, through whose active and efficient efforts such a happy result was attained, has not received compensation commensurate with the service already rendered, as well as that which may have to be rendered, in the event that an appeal is taken to the Supreme Court. It is apparent to all that the great good accomplished by him and his associated counsel is most far-reaching in its effect and places in the hands of the legalized medicine in this state the instruments for further relief along these lines. Hence it is, that your committee after full consideration of this matter desire to present the following for your consideration:

We recommend to the House of Delegates that they raise, cause to be raised or appropriated, the sum of \$500 to pay Mr. Littleton and associate counsel for services already rendered and to be rendered in the further conduct of the case of the State vs. J. S. Anderson, in the event the same is carried to the Supreme Court for final consideration.

Again, your committee has had before it certain suggestions as to changes in the present Medical Act, which to those interested, as well as to your committee, are seemingly of importance and deserving of consideration. These changes contemplate amendments to the present acts covering the practice at medicine in the state, and if they could be presented with the assurance that they could be

or would be favorably considered and passed by the legislature, we would be more than inclined to recommend them to this body for action at this time, but after a free discussion of the possibilities involved, in attempting their passage, we have thought best to advise against any agitation of these questions.

Hence, this committee recommends in the strongest manner possible, that absolutely no effort be made to change the existing laws governing the practice of medicine at the present time.

We further ask, urge, and insist, that each delegate and member of the Association see in person the members of the legislature from his county, and request them to consider no amendments to the laws, as they now exist, unless such amendments come from the official Legislative Committee of the State Medical Association.

Your committee would also call attention to the fact, that in the conduct of the business or affairs placed in its hands requires the expenditure of money to meet the demands made upon it in keeping advised on situations which may develop during the meetings of the legislature, for such as correspondence, postage, telegrams and stenographer, etc., hence we would suggest that this body provide for such incidental expense by appropriating an allowance for this specific purpose—say \$150.

GEORGE H. PRICE, Chairman;

W. M. McCABE,

G. P. ZIRKLE,

W. C. DIXON,

Committee.

(Dr. A. B. DeLoach, a member of this committee was not present).

A Member: Is that report for discussion?

The Chairman: Yes, sir.

Dr. Crook: I want to state a tangible fact that occurred recently as a result of the great work of this committee at the Southern Medical Association in Dallas, Texas. Just before I was ready to depart for the train, a young gentleman, a graduate of Vanderbilt University and a member of the State Board of Examiners, rushed down into the office of the hotel, considerably excited and grabbed me by the arm and said, "Oh, thank you, Crook, for being here; come upstairs; come upstairs right now. Can you talk before the State Board of Examiners? They have just turned down Tennessee as unworthy of reciprocity with Texas. It is outrageous; they just voted it down." He said that somebody had told them that Tennessee had quite a rotten law and they didn't think he had any information that could straighten them out, and he wanted me to come up there at once and address the body. So I

went up and this gentleman introduced me to them as the President of the State Association. So I addressed the gentlemen and said that I would be glad to give them any information about the Tennessee medical laws they wanted to have. I told them I had no interest in the matter except to tell the truth and to remove any impression they were under as to the Tennessee laws that would reflect a discredit upon our state. They fired a few questions at me. I told them about the difficulty our committee had had in putting through this law; that I personally experienced this difficulty, and that Tennessee now has the most efficient medical law of any of the states of the Union, in the opinion of the President of the American Medical Association. "Now, gentlemen," I said, these are facts; I want to know your decision." They finally put it to a vote and rescinded their action. But the truth of the matter was that our state was done an injustice. Our committee had put this law on the statute books, and after it was explained to them they wanted reciprocity of you present expect to go to Texas and locate or not, but if you do, it will be a lot easier for you now.

The Chairman: What is your pleasure in regard to this report on Public Policy and Legislation?

A Member: Mr. Chairman, I move that the report be accepted and adopted. Seconded. Carried.

Dr. McCabe: I want to know how much money is to be raised, that is, to be contributed to the profession of Roane county to pay Mr. Littleton and for other necessary purposes? When the suggestion was made to raise this fund, there was no provision made as to how it should be raised. As I understand it, Dr. West claims he hasn't any money in the treasury, and, of course, it couldn't be donated from this organization. Therefore, some method by which this fund can be raised must be determined upon at this meeting. I don't know how it can be raised unless by subscription, and if it is raised by subscription, I presume we will do what we can. I would like to have some suggestion in regard to this matter.

The Chairman: I don't understand that the adoption of this report carries with it the ap-

propriation or of the \$150 expense money; I may have a different idea of that from some of the others.

Dr. McCabe: Is that money to be appropriated, that \$150?

The Chairman: I should think that would be a separate account, doctor. I don't think the adoption of this report carries with it that appropriation. There are two sums mentioned; \$500 for this matter and \$150 expense account of this committee. You have heard the motion that this report be adopted. Seconded. Motion put and carried.

Dr. McCabe: I move that \$150 be appropriated out of the treasury to defray the expenses of the Committee on Public Policy and Legislation. Seconded.

The Chairman: You have heard the motion to appropriate \$150 out of the treasury to pay the expenses of the Committee on Public Policy and Legislation; that is for the future year, do I understand that, doctor?

Dr. McCabe: Yes, sir.

A Member: Is that appropriation now for the purpose of putting a watchman over the legislature or something of that kind. I don't know what that is for?

Dr. McCabe: That appropriation is to defray the expenses of this committee. In other words, last year at the last session of the legislature money was spent for various purposes. We must have a "watchman" at the legislature, no doubt about that; he must be a good one, too.

A Member: You ought to have a bulldog.

The Chairman: But we don't want to buy him a muzzle, doctor, as I understand.

Dr. McCabe: No. And we must have a stenographer who is constantly at the capitol. Every time a bill is introduced, it don't make any difference what the type of the bill is, just so it involves some medical problem, that bill should be copied and sent our committee immediately. Then we could sit down and read the bill and know the contents of it, and when the bill came up for the second reading the committee would know how to handle the bill.

The Chairman: All in favor of the motion for the appropriation of \$150 for expense account of the Committee on Public Policy and Legislation, make it known by saying "aye."

Carried.

Dr. Tigert: I make a suggestion relative to the raising of \$500 for defraying the expenses of Mr. Littleton and other expenses involved. Let that be referred to a committee of three to be appointed by the President to devise ways and means to raise this amount.

The Chairman: You have heard the motion in regard to raising this \$500 for legal expenses in connection with the prosecution of illegal practitioners by referring it to a committee of three.

A Member: I would like to amend that motion by adding that this committee report at our session in the morning.

The Chairman: Do you accept the amendment?

Dr. McCabe: Yes, sir.

Dr. Tigert: It seems to me that now is the time to raise this money and not to put it off. It is probably true that the men who will contribute to this fund are here today. If we put it off and make our appeal through the Journal, we will have the same trouble that Dr. West had last year.

The Secretary: I don't want to keep the House of Delegates here unduly, but this proposition is very near to my heart for the reason that I have been right square in the middle of the thing, at long distance, it's true, and know what has been done, what difficulties have been encountered and who has borne the burden. There sits the man right over there that carried the load, Dr. Zirkle. And next to Dr. Zirkle, and in one sense ahead of him, is the young lawyer, Mr. B. H. Littleton, who has prosecuted the actual court procedure. Now, gentlemen, this matter resolves itself into this very thing, that through the persistent, everlasting, hard-headed, Dutch-fighting spirit of Dr. Zirkle, and the East Tennessee fighting spirit of Mr. Littleton, we have a decision from one of our higher courts through which handle these infernal scoundrels in this state. It is for the benefit of every citizen of the state alike. The further fact stands out that the State Medical Association last year undertook to finance this proceeding, against this the most notorious of all quacks. A man stood on the floor in the House of Delegates in Nashville and said, "I will give \$100," and when the con-

tribution came to me it was "one bone." We got \$242. The Tennessee State Medical Association fell down on its job. It is "up to us." If you are going to do it, do it now. Mr. President, if I knew how to say anything to impress upon these gentlemen just how important I believe this matter is, and how valuable this decision that has been obtained is to the state, and to impress upon you that we haven't done what we contracted to do—if there were a way for me to say what would convince, I would say it. I hope that you are going to do it right now.

Dr. Tigert: I had exactly the same idea that Dr. West had. This committee cannot levy a tax upon us. The only thing that they can do is to ask for contributions. The reason I wanted to amend it was so that the committees could report in the morning to the House. Get the contributions now; get them up right here; let them subscribe before we leave today and tomorrow. That is the only reason I made the motion.

A Member: I am speaking of the motion and particularly to the amendment. I would suggest that Dr. Tigert is right and that what Dr. West said here is correct, but that what we ought to do is to have a brief form of report and let everybody write their names on it, and we will get the money up in a half an hour.

The Chairman: You have heard the motion that this committee be appointed and they are expected to get busy. Any further discussion—if not, all in favor signify it by saying "aye."

Carried.

The Chairman: They will report in the morning.

Dr. Tigert: My idea was to make the report to the meeting of the House of Delegates. It wouldn't take more than three minutes to read the report and hand the paper around.

The Chairman: The motion as amended provided that the committee report back to the House of Delegates in the morning. That is the motion as it stands.

A Member: Do it this afternoon; do it now and let them report in the morning.

Dr. Crook: I move that the Chairman of that committee stand up in the front here and

call for subscriptions; first first \$5.00, then \$2.00, then \$1.00. Pass the hat around here.

The Chairman: You ask that as an amendment, but that the committee report in the morning?

A Member: I move that the President ask for subscriptions from the members of the House of Delegates and that as soon as that is done, that the whole body of delegates go into the general meeting and explain the matter to them and ask for contributions from them.

A Member: I move that Dr. Price be selected to go into the other hall and explain the purposes of this contribution. Seconded.

The Chairma: All in favor of that motion will signify it by saying "aye." Carried.

(Contributions were here received by the Secretary).

A Member: Mr. Chairman, I move that if over \$500 is collected to defray the expenses of the gentlemen from Roane county, that that fund be kept and expended for similar purposes in other counties. Seconded.

The Chairman: You have heard the motion, gentlemen, that if over \$500 be collected that that amount be kept and used for similar purposes in other counties in the future. Is there any discussion?

A Member: Question.

The Chairman: All in favor of that motion make it known by saying "aye." Carried.

The Chairman: Gentlemen, there is nothing before the House. The time has past for the meeting of the House of Delegates. I will entertain a motion to adjourn until tomorrow morning at 8 o'clock.

A Member: I move that we adjourn until 8 o'clock Thursday morning.

The Chairman: You have heard the motion. All in favor of it make it known by saying "aye." Carried.

Thursday Morning.

The Chairman: The House of Delegates will please come to order. Gentlemen, the first order of business is "New Business," and ordinarily the first thing under that is the report of the Nominating Committee. I think it would be better to defer that for a while, so that more members of the House of

Delegates have time to get here, and we might as well pass to some of the committee reports. There is an auditing committee appointed to audit the books of the Treasurer.

The Secretary: Mr. Chairman, the Auditing Committee have handed in their report to the effect that the Treasurer's accounts have been audited and found correct; signed by G. P. Zirkle, J. F. Gallagher and W. B. Burns.

The Chairman: You have heard the report; do you accept the report of the Auditing Committee; what is your pleasure in regard to this?

A Member: I move that it be accepted. Seconded.

The Chairman: Does that apply to the Auditing Committee or the Treasurer's report, or both?

A Member: Both reports are accepted.

The Chairman: You have heard the motion. All in favor of that signify it by saying "aye." Carried.

Dr. Burns: Dr. Cowden was charged \$5.00 for a check book and he paid that out of his own pocket. I wondered if the House of Delegates would stand for that, or if they wanted to reimburse him for that \$5.00?

The Secretary: Mr. Chairman, Dr. Cowden ought to have written himself a check for that. He ought not to have to pay for that. He had every right to reimburse himself.

The Chairman: I will leave that to Dr. West to take it upon himself to see that Dr. Cowden is repaid. I think we can let it go at that.

Dr. Broyles, have you the report of the Reference Committee?

Dr. Broyles: Yes, sir. (Reading report of Reference Committee.)

Mr. President and Members of the House of Delegates:

Your committee to whom was referred the suggestions of the President, looking to the pursuit of a definite and fixed purpose, other than the social and scientific, beg leave to report that the ideas incorporated in the brief suggestions made by the President, looking to the influence of the State Society in the appointment of the members of the

State Board of Health, the State Board of Medical Examiners and the medical heads of state institutions appear wise and timely. Also through the county societies an influence should be exercised in the appointment of county and city boards of health, jail physicians, school and other inspectors as well as other medical appointments.

Your committee begs leave to offer the suggestion that since such recommendations are of such far-reaching importance that they deserve more elaboration and respectfully suggest that they be referred to a committee of five, all to be selected from one section of the state, for the purpose of more deliberate study and elaboration, especially looking towards a practical method by which they may be made of worth. This committee to report one year hence.

Relative to the suggestion that the Legislative Committee serve for two years instead of one, we find that it would require a change in the By-Laws, which if handed in today, may be acted upon tomorrow.

Very respectfully submitted,

C. J. BROYLES,
PERRY BROMBERG,
WM. T. BLACK,
Committee.

Dr. Broyles: Mr. President, this was to have been reported yesterday, but in the hurry of things it was not called for. The last suggestion, of course, could not be carried out, that is, relative to the change in the by-laws. I believe to expedite matters this morning, if it be proper, I will move that it be referred to the Committee on Legislation. They are all from Nashville, aren't they?

The Secretary: No, sir. One is from East and one from West Tennessee.

A Member: There is one man here on that committee.

The Chairman: Gentlemen, you have heard that these recommendations be referred to a committee of five from the grand divisions of the state, and for further consideration to be reported at the next annual meeting. Is there any discussion? Seconded.

The Chairman: All in favor of the motion signify it by saying "aye." Carried.

The Chairman: I will appoint Dr. Broyles Chairman of that committee, and ask him to appoint his co-laborers.

ceived, and a number of the members of the Association have received a communication

from Dr. Bloodgood of Baltimore, who is in charge of the work for the establishment throughout the country of First Aid Committees, whose purpose it is to develop the matter of standardizing first aid. He asks that we have a committee appointed from the Tennessee Medical Association to take up that work of development in the state. Dr. Ellett has a letter here. Do you want me to read it?

The Chairman: Yes.

(Secretary reads letter from Dr. Bloodgood.)

The Secretary: Now, Dr. Bloodgood has been in communication with a number of surgeons in Tennessee, and I think the men who are interested in this work will thoroughly understand this movement.

The Chairman: Gentlemen, you have heard this communication. What is your pleasure in regard to the appointment of such a committee?

A Member: I move that the committee be appointed, Mr. Chairman.

The Chairman: You have heard the motion. Is there any discussion? Seconded. Motion put and carried.

The Chairman (to Dr. Troutt): Are you connected with the National Guard? I will appoint Dr. W. C. Campbell of Memphis, Dr. Lucius Burch of Nashville, and Dr. J. M. Troutt of Knoxville on that committee.

The Chairman: Any other special committees? (No response.) Is there any other new business? (No response.) Then we will hear from the Nominating Committee?

Dr. Broyles: Mr. President and gentlemen: The Nominating Committee present for your consideration the following named gentlemen for the various offices of the Association:

For President: Dr. C. N. Cowden of Nashville, Dr. A. F. Richards of Sparta, Dr. J. S. Campbell of Gordonsville.

For Vice-Presidents: Dr. C. J. Carmichael of Knoxville, Dr. J. T. Moore of Allgood, Dr. J. L. McGehee of Memphis.

For Secretary: Dr. Olin West of Nashville.

For Councilors: First District, Dr. C. P. Fox of Greeneville; Third District, Dr. J. A. Hardin of Sweetwater; Fifth District, Dr. F. B. Reagor of Shelbyville; Seventh District, Dr. J. A. Beasley of Columbia; Ninth District, Dr. R. W. Griffin of Tiptonville.

For Delegate to A. M. A.: Dr. Perry Bromberg, Nashville; Alternate, Dr. S. R. Miller, Knoxville.

For Board of Trustees: Dr. H. T. Brooks, Memphis.

The Chairman: Gentlemen, you have heard the report of the Nominating Committee.

A Member: I think the Nominating Committee should nominate a man for Treasurer. We have had some misgiving along that line and we didn't nominate him.

The Chairman: My understanding is that the Treasurer is elected for a term of three years.

The Secretary: The House of Delegates does not elect the Treasurer. They elect a Board of Trustees and the Board of Trustees elect their own Chairman, who is ex officio Treasurer of the Association.

The Chairman: That is correct. He is elected for three years. The first thing under the report of this committee will be the election of the President. You have heard the nomination, Dr. C. N. Cowden of Nashville, Dr. A. F. Richards of Sparta, and Dr. J. S. Campbell of Gordonsville. Unless you otherwise desire, it will be by ballot.

(Vote by ballot was here made, and after the same were collected, the Secretary made the following announcement:)

The Secretary: Mr. Chairman, 30 votes have been cast. Dr. Cowden received 18, and Dr. Richards 12.

Dr. Dulaney: I move to make it unanimous for Dr. Cowden.

Seconded.

The Chairman: The motion has been made and seconded that the election of Dr. Cowden be made unanimous. All in favor of that will signify it by saying "aye." Carried.

The Chairman: For Vice-Presidents, of which we have one for each grand division

of the state, Dr. C. J. Carmichael of Knoxville, Dr. J. T. Moore of Allgood, and Dr. J. L. McGehee of Memphis. What is your pleasure, gentlemen?

A Member: I move that we elect them by one vote, and that the Secretary be instructed to cast that vote.

Seconded.

The Chairman: You have heard the motion that the Secretary be instructed to cast the vote of the House of Delegates for these three gentlemen as Vice-Presidents of the grand divisions of the state. All in favor of that motion signify it by saying "aye." Carried.

The Secretary: It gives me great pleasure to cast the unanimous vote of the House of Delegates for Dr. C. J. Carmichael of Knoxville, Dr. J. T. Moore of Allgood, and Dr. J. L. McGehee of Memphis as Vice-Presidents for the ensuing year.

The Chairman: The next nomination is for Secretary. There is only one nominee, Dr. Olin West of Nashville. What is your pleasure, gentlemen.

A Member: I move that the Chairman cast the unanimous ballot of the House of Delegates for Dr. West.

Seconded.

The Chairman: All in favor of that motion will signify it by saying "aye."

Carried.

The Chairman: Gentlemen, I assure you it gives me a great deal of pleasure to cast the unanimous ballot of the House of Delegates for Dr. West as Secretary. I think we could comb the State of Tennessee with a fine-tooth comb and could find no other Secretary in the State as good as he is.

The next order of business is the election of Councilors: First District, Dr. C. P. Fox; Third District, Dr. J. A. Hardin; Fifth District, Dr. F. B. Reagor; Seventh District, Dr. M. A. Beasley, and Ninth District, Dr. R. W. Griffin. There is only one nominee for each of the districts.

A Member: I move that the Secretary be instructed to cast the unanimous vote of the House of Delegates for the respective Councilors.

Seconded.

The Chairman: You have heard the motion, gentlemen. All in favor of it will signify it by saying "aye." Carried.

The Secretary: Mr. President, I take pleasure in casting the unanimous vote of the House of Delegates for Drs. C. P. Fox, J. A. Hardin, F. B. Reagor, M. A. Beasley and R. W. Griffin, as Councilors for the First, Third, Fifth, Seventh and Ninth Districts, respectively.

The Chairman: The next is the Delegate to the American Medical Association, Dr. Perry Bromberg of Nashville, and Dr. S. R. Miller of Knoxville as alternate. I think it is a very wise thing on the part of the Nominating Committee that they have renominated Dr. Bromberg. I have served in the Medical Association, and a man's first term there is just like the first term of a man in the legislature—he is slightly ornamental and that is all—and until he gets the run of affairs, he is of very little use to his constituents. I think it is a very good plan that you are following here of re-electing a man who is familiar with the ropes and who enjoys the confidence of the House of Delegates, as I am pretty sure that Dr. Bromberg does. What is your pleasure?

A Member: I move that the Secretary be instructed to cast the unanimous vote of the House of Delegates in favor of Dr. Bromberg for delegate, and Dr. Miller for alternate.

Seconded.

The Chairman: All in favor of the motion signify it by saying "aye." Carried.

The Secretary: I take pleasure in casting the unanimous vote of the House of Delegates for Dr. Bromberg as a Delegate to the A. M. A., and equal pleasure in casting the unanimous vote of the House of Delegates for Dr. S. R. Miller, as Alternate Delegate to the A. M. A., for two years each.

The Chairman: The next order of business is to elect the Board of Trustees, on which board there is a vacancy. The Nominating Committee has nominated Dr. H. T. Brooks of Memphis. What is your pleasure.

A Member: I move that the Secretary cast the unanimous vote of the House of Delegates for Dr. H. T. Brooks as a member of the Board of Trustees. Seconded.

The Chairman: All in favor of the motion signify it by saying "aye."

Carried.

The Secretary: I take pleasure in casting the unanimous vote of the House for Dr. H. T. Brooks of Memphis as a member of the Board of Trustees for three years.

The Chairman: There is a provision in our Constitution that each alternate meeting shall take place at Nashville, so I don't think there is any necessity of going into the question of voting on that matter. So we won't consider that.

The Secretary: Mr. Chairman, I was about to overlook my hand here. These fellows have gone off and elected Dr. Cowden as President. That makes another vacancy in the Board of Trustees, Dr. Petty having gone made one vacancy, and by elevating our good friend Cowden to the Presidency another vacancy has been created. I move that the Nominating Committee be given a few moments to bring in another nominee for this office.

Dr. Gallagher: I suggest to the committee that it be a Nashville man. In operating the finances of the Society it is well for the nominee to be a Nashville man; I am fully aware of the fact that the Treasurer is elected by the Trustees. I simply make that suggestion looking over the personnel of the present Board of Trustees.

The Chairman: Who is the other member of the Board?

The Secretary: Dr. C. J. Broyles, and a blamed good one, too.

The Chairman: There are only three Trustees. Dr. Broyles and Dr. Brooks, whom we have just elected, and the other one would come from Middle Tennessee. I don't know whether that is the rule or is just a custom.

A Member: The election of this Trustee doesn't carry with it the Treasurer?

The Chairman: No, the Board elect their Treasurer. I think we had better do that in order and let the Nominating Committee retire.

(Nominating Committee here retires from the room.)

The Chairman: Is there any further business? (No response.) Any new business or unfinished business?

The Secretary: I would like to bring a matter before the House of Delegates. We succeeded yesterday afternoon in getting enough cash and subscriptions to make the amount that was named in the report of the committee for the prosecution of illegal practitioners and for the relief of the Roane county situation, but no directions were given in the report of the committee as to just how this money should be expended; how much should be paid to Roane county for lawyers' fees, etc., and what disposition should be made of any balance. Inasmuch as I am the custodian of the fund, I would like to have explicit directions as to what to do with it; I would like to have instructions given me by the House this morning.

The Chairman: Do you know what the financial state of this case is.

The Secretary: Well, the lawyer who is prosecuting the case has received something more than \$100.00 for his services so far. That is absolutely insignificant in view of the amount of work he has done. There is still some threatened litigation, inasmuch as the case will probably go to the Supreme Court; of course, we do not know what the cost of that will be, but my suggestion would be that a fair amount of this money be delivered to the lawyer through the Roane County Med-

ical Society, and that the balance be reserved in helping to defray future costs.

A Member: How much is that fund?

The Secretary: About \$500.00, Doctor. I don't know exactly; there are some subscriptions and some little amounts to be added to that.

A Member: I move that the fund be turned over to Dr. Zirkle, at Kingston, who is the man in charge of the prosecution in this case.

The Secretary: I hope that that suggestion won't be carried out, because I don't think that all of this money will be needed by Dr. Zirkle in Roane county.

Dr. Roberts: The finances of this institution are in the hands of the Board of Trustees. I don't think that there are any Judases among our Board of Trustees and I don't think you have got one there. I think that this matter should be left to the Board of Trustees rather than the House. The House doesn't hardly always understand.

Dr. McCabe: My motion on yesterday was that this fund should be collected and turned over to the Treasurer of the Association, and my motion carried.

The Secretary: If that was the motion, I didn't so understand it. I beg the gentleman's pardon.

Dr. McCabe: The intention of my motion on yesterday was that it should be placed in the hands of the Treasurer and that he should be the disbursing officer. Of course, if you desire to change it, that is all right. I think it is in very good hands just like it is.

The Chairman: I think the question is, not as to the custodian of that fund, but as to the disposition of the fund; that wasn't right clear in the minds of the members.

Dr. Burns: Dr. West knows more about this matter than anybody else. Where does he want to put it? I think he can place it where it can best be used.

The Secretary: I think a reasonable amount should be paid to the Roane County Medical Society to be paid to the lawyer. I think another reasonable portion ought to be reserved for paying future costs by whomsoever the fund is to be delivered to. Dr. McCabe says that it be given to the Treasurer,

and the Treasurer, I am sure, will want explicit instructions as to how to dispose of it.

Dr. McCabe: The motion was that the sum of \$500.00 be collected for the case of State vs. Anderson, and that any sum over \$500.00 be placed as a separate and distinct fund for future suits or for future trouble, and I move that Dr. West be given complete control of that fund, and let it be disbursed according to his own ideas and judgment. It must be placed in one man's hands. The Board of Trustees live in different sections; therefore I think it should be placed in one man's hands and he should be given the fund.

Seconded.

The Secretary: Doctor, add to that motion that a statement showing the status of the fund be published. (Agreed to.)

The Chairman: You have heard the motion that this fund be placed with Dr. West for such disposition as to his best judgment seems proper, and that a statement of the amount and disposition of it be duly published in the Journal. Is there any discussion?

A Member: Question.

The Chairman: All in favor of the motion signify it by saying "aye." Carried.

The Chairman: We will now hear from the Nominating Committee.

Dr. Broyles: The committee desires to nominate Dr. Joseph F. Gallagher of Nashville as a member of the Board of Trustees.

Dr. Roberts: I move that the Secretary be instructed to cast the entire vote of the House in favor of Dr. Gallagher as a member of the Board of Trustees for the unexpired term of Dr. Cowden. Seconded.

The Chairman: You have heard the motion. All in favor of that motion signify it by saying "aye." Carried.

The Secretary: If Dr. Gallagher will sit up a little straighter, I will cast the unanimous vote of this House of Delegates for him as Trustee for the unexpired term of Dr. Cowden. (Vote cast by Secretary.)

The Chairman: Dr. Gallagher has demonstrated that he can get straight, if he wants to. Any further business? Dr. West has just suggested that it might be well to express our sentiments in regard to the suit

that the American Medical Association is now going through with in Chicago, and if the House of Delegates sanction that view, I would be glad to entertain a motion. Here is a good chance to decide whether we are on the side of organized medicine or whether we are on the side of patent medicines.

A Member: I move you that our Secretary be instructed to wire or to write the American Medical Society that we heartily endorse their action, and hope that they will be victorious in their case. Seconded.

The Chairman: The form of that letter will be left to the Secretary. You understand the sentiment of the motion. All in favor of the motion signify it by saying "aye." Carried.

The Chairman: Gentlemen, before we adjourn, I think there is one thing that might be said to this House of Delegates that we have not organized in this state as we ought to. We have not the number of men in the society in proportion to the outside number of registered regular physicians, and it is up to the Councilors and County Secretaries to see that this is corrected. Some of the county secretaries come here with that idea in their mind, but the Councilors ought to keep behind the county secretaries and see if that can't be improved. Now, for instance, in my own county, one of the largest counties in the state in point of population, we haven't the members in our society today that has this county (Knox), which is very much smaller than ours both in population and in number of physicians. Now the burden of that rests on the secretary of the county society and if he don't know it he will within twenty-four hours after I get back home. Let the secretaries get behind the members and the councilors get behind the secretaries and see if we cannot make a better showing next year in the number of registered physicians in the state.

Another thing is this. The defense fund is certainly lagging because it has not been

properly brought to the attention of the members that they can get reasonable medical defense for one dollar. The gentlemen were talking yesterday about being able to get it for \$15.00. I can't get it for less than \$35.00. I want to go around and see where they can get it for \$15.00. I think that is the sentiment of the House of Delegates, and they ought to put it on a basis so that we will have a better showing next year.

The Secretary: Mr. President, the House of Delegates of the Tennessee State Medical Association has received this letter:

To the President and House of Delegates, Tennessee State Medical Association.

Gentlemen:

We, the undersigned, have been appointed a committee to notify you that next year the Section on Eye, Ear, Nose and Throat will begin its session at 8 p. m. on the first day of the regular session, and continue through the next day, and to request you that we be furnished an official stenographer for this time.

Respectfully,

CHAS. HUFF. DAVIS,

A. B. DANCY,

E. L. ROBERTS,

Committee.

The Secretary: Mr. President, the Section on the Eye, Ear, Nose and Throat was formed last year—duly organized—and had their first meeting yesterday. We were able to have the official stenographer take the proceedings of the section this time, but if they are to sit on the second day of the meeting, we will have to employ an additional stenographer. It is the purpose of this request to the House of Delegates to ask that we furnish them this service.

Dr. Broyles: I move that this matter be referred to the Secretary. Seconded.

The Chairman: Does that carry with it the recommendation that he provide a stenographer?

Dr. Broyles: Yes, sir.

The Chairman: All in favor of that motion signify it by saying "aye." Carried.

The Chairman: Any other business?

A Member: Before we adjourned yesterday we were successful in collecting a fund for the prosecution of this quack. I think it advisable that every delegate in returning home shall see that this is published in his local paper, so that these quacks will see what the State Medical Society is doing and what they expect to do in regard to these quacks. I think it would have a wonderful effect. I move that the House of Delegates see that their local papers publish the proceedings of this meeting in that respect. Seconded.

The Chairman: You have heard the motion. All in favor of it signify it by saying "aye." Carried.

Dr. Lequire: I would like to discuss that question.

The Chairman: I will be glad to reopen the matter, Dr. Lequire.

Dr. Lequire: You know what the public is very skeptical on the question of organized medicine. It has been my observation that if you give too much publicity to such matters it will serve to advertise the quack better than anything, if you go to advertising that in the newspapers. It will make enmity against the medical profession in a great many respects. Let us do what we do without making a great blow about it, and show the man what we can do and not make too much blow of it. I have noticed a great many unethical members coming into a neighborhood and starting out into practice. We had a quack practicing in our country. If you start out with the local profession to fight him, that is what he wants, but if you say nothing, but go ahead and, without advertising him, prosecute him and say very little about it, you will get the desired results. That is my idea about it.

Dr. Carmichael: I don't think that this resolution can be of much service so far as quacks are concerned. I think it should be handled through the regular channel. If one of them sticks his head up, crack it; but don't say anything about it, but crack it hard

enough to put him out of business. It is just as the Doctor says: If we go to advertising it, they will think that we are jealous of them. I move you that the resolution be tabled. Seconded.

The Chairman: You have heard the motion. Going back on my tracks, do you desire to consider the motion now as if it had not been put; but, in order to table a motion it requires a two-thirds vote. All in favor of tabling this motion will signify it by saying "aye." Carried.

The Chairman: Is there any further business. Does any one know of any other business that will necessitate the House of Delegates to call another session at two o'clock?

A Member: Was there not some motion entered that was to be acted on this morning relative to the amendment of the Constitution and By-laws?

Dr. Haase: I withdraw that motion and will give the Committee on Medical Defense another year with the secretaries of the county societies to see if they can't work it out.

The Chairman: That motion introduced to amend the by-laws was with reference to the change of dues to include one dollar for the Medical Defense Fund, and is withdrawn. Is there any further business?

Dr. Troutt: There is one thing that I want to bring to the attention of the House of Delegates, and that is that the medical profession is not taking much interest in the movement for national preparedness. All the resources of the country are being tabulated and catalogued by the nation in the event of war. The automobile trucks are being listed and different economic provisions are being catalogued. I think the medical profession ought to take that under consideration. The Medical Reserve Corps is open to any physician who wants to take the examination, and not only that, but the men who join the Medical Reserve Corps are the men who can give as much or as little time as they choose. The main idea is that the men will be listed with the War Department in case of war. During the Spanish-American war, we had some blacksmiths, dentists and other men who were

not as capable as they should have been. I am sure that the War Department is very anxious that the medical profession take this up and get in line with preparedness, and, as I say, there is a movement on foot now to get the medical corps men all over the larger states. It is going to be brought to the attention of every one of the county societies very soon. I throw that in as a suggestion.

The Chairman: Is there any further business? If not I will entertain a motion that we adjourn.

A Member: I move that we adjourn. Seconded.

The Chairman: It is moved and seconded that we adjourn. All in favor of it signify it by saying "aye."

Carried. Adjourned.

REPORT OF COMMITTEE ON CONSERVATION OF VISION.

To the House of Delegates:

Since the last meeting I have had five lectures delivered on the subject of Conservation of Vision, as follows:

Memphis, Tenn., April 16, 1915, at the Nineteenth Century Club, by Dr. J. B. Stanford of Memphis.

Covington, Tenn., April 27, 1915, by Dr. J. B. Stanford.

Sparta, Tenn., January 21, 1916, by Dr. A. F. Richards of Sparta.

Franklin, Tenn., February 10, 1916, by Dr. Hilliard Wood of Nashville.

Memphis, Tenn., March 29, 1916, by Dr. E. C. Ellett.

In addition to this, I have an appointment to deliver one on the 27th inst. before the Parent Teachers' Association of the Central High School of Memphis.

It has been very difficult for some reason to get the necessary co-operation, and most of those to whom I have written in regard to the lectures do not reply to my letters at all. I do not know how else to remedy this than to persevere, which I will do.

E. C. ELLETT.

"EXHIBIT A." LIST OF COUNTIES, MEMBERSHIP, NUMBER PAYING FOR MEDICAL DEFENSE.

County	1915 April 10th	1915	1916 April 3rd
Anderson	13	13	11
Bedford	15	15	15
Blount	2	2	1
Campbell	1	2	1
Carroll	17	19	9
Chester	0	0	0
Cocke	0	0	0
Coffee	0	0	4
Crockett	0	0	0
Cumberland	5	5	6
Davidson	116	129	123
Dickson	0	2	3
Dyer	14	16	19
Fayette	1	1	2
Franklin	0	5	8
Gibson	20	20	21
Giles	17	19	20
Greene	1	2	3
Grundy	8	8	8
Hamblen	9	9	15
Hamilton	16	17	17
Hardeman	1	1	0
Haywood	8	9	4
Henderson	4	4	3
Henry	1	1	3
Hickman	0	1	0
Jackson	11	12	12
Jefferson	13	16	14
Knox	57	61	64
Lake	1	1	3
Lauderdale	0	1	2
Lincoln	14	14	14
Loudon	1	1	1
McMinn	1	1	0
McNairy	5	5	12
Macon	0	0	4
Madison	28	29	25
Marshall	16	16	13
Maury	0	1	2
Monroe	10	10	11
Montgomery	6	6	9
Obion	0	7	0
Overton	8	8	0
Polk	0	0	0
Putnam	17	18	10
Rhea	6	6	8
Roane	10	10	7
Robertson	6	7	11
Rutherford	0	0	5
Scott	0	0	8
Sevier	0	0	0
Shelby	50	67	20
Smith	0	0	0
Stewart	0	1	0
Sullivan, Carter and John- son	5	5	1
Sumner	13	13	0
Tipton	10	11	10
Unicoi	0	0	0
Warren	4	4	2
Washington	10	13	15
Weakley	10	11	7
White	13	14	12
Williamson	7	7	7
Wilson	3	4	5
Total	604	680	610

This table is part of the report of the Committee on Medical Defense.



CHARLES NORRIS COWDEN, M. D.

NASHVILLE

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

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MAY, 1916

EDITORIALS

CHARLES NORRIS COWDEN

President Tennessee State Medical Association.

Our new President, Charles Norris Cowden, son of Dr. John Cowden and Mrs. Mary Leonard Cowden, was born near Petersburg, Tennessee, in the year 1864. He received his preliminary educational training in the elementary schools of Petersburg and at the Normal College at Winchester, and in 1886 received his M. D. degree from Vanderbilt University.

Dr. Cowden entered upon the practice of medicine at Petersburg, where his honored father had been long engaged in the duties of a large practice. In 1899, Dr. Cowden went to Fayetteville, in which city he was very successful until 1906, when he removed to Nashville, his present home.

For two years after coming to Nashville Dr. Cowden was a member of the teaching force of the Vanderbilt School of Medicine, and was Professor of Gynecology in the Medical Department of the University of Tennessee during the years 1909, 1910 and 1911. He is now Attending Surgeon at the Nashville City Hospital and Attending Gynecologist at St. Thomas Hospital.

Dr. Cowden has been actively interested in the medical societies of his section for many years and has served as president of his county organization and the Middle Tennes-

see Medical Association, and now has been chosen as head of the State Medical Association. He holds membership in various medical and surgical societies outside his own state and is a Fellow of the American College of Surgeons. For two years just past he has served as Treasurer of the Tennessee State Medical Association.

Charles Norris Cowden is known to his friends as a gentleman, unselfish and unafraid. Troubles have assailed him, but never overcome him; in adversity his friends have always found him with a smile on his face and with no word of complaint from his lips. When fortune has favored he has always been eager to share her bounties with those less abundantly supplied than he. He has ever been found in the councils of those who believe in the right and who are willing to struggle for its advancement.

The administration of the affairs of our Association has been put into capable hands. In Charles Norris Cowden our members will find a President who, like others that have lately laid down the charge, will give the best that is in him for the elevation and advancement of organized medicine in Tennessee.

THE A. M. A. DETROIT MEETING.

Tennessee should be well represented at the coming meeting of the American Medical Association at Detroit, June 12-16. The time has come when, as never before, the physicians of the whole country should show to the world that they believe in the maintenance and advancement of high standards in medicine and that they are enthusiastically and everlastingly behind the officers of the A. M. A. in their fight against quackery and fraud wherever found. If there is one state that should show more than another its determination to uphold the Journal of the American Medical Association in the splendid work it has done for the

suppression of worthless patent medicines, Tennessee is that state. The presence of a large delegation at the Detroit meeting will go to show that Tennessee is determined to stand by the colors of organized medicine in the struggle for right over wrong.

We invite the attention of our readers to the advertisement of the L. & N. Railroad Company which appears in this issue giving information concerning the service of this road for those who will go to Detroit. Reservations should be made at once for Pullman accommodations.

Detroit is well provided with hotels, but if one wishes to be sure that he will be comfortably located he should make his arrangements early.

THE KNOXVILLE MEETING.

The doctor who cannot see that medical organization is worth while was not at the Knoxville meeting. The doctor who feels that he is self-sufficient was not there. The doctor who is satisfied with what he already knows was not there. The doctor who is suspicious of his brother practitioner without just cause was not there. The doctor who is "in the game" for what he can get out of it for himself was not there. Many of our really best men were not there, for one reason or another.

But four hundred, more or less, of the very highest type of Tennessee physicians were there and glad to be there.

The 1916 annual meeting was a *success*. A fine attendance of fine-looking men, who went to the meetings and stayed through them, heard the best presidential address ever yet read in Tennessee or elsewhere. They listened with interest and profit to good papers and discussions. They found great pleasure in mingling with their professional friends from all parts of the state. They were delightfully entertained by the Knoxville profession. They gave and they got what was worth having and went

home better men and better doctors than they were when they came to the meeting.

The presence of men who have made their influence felt in Tennessee medicine but who have gone from us within the year was missed and their absence was mourned. That others were there who have lately renewed their old relations to our state society was a source of sincere pleasure to everyone.

The out-of-the-state guests who contributed to the Knoxville program, Drs. Cubbins, Fischer, and Calhoun, added very greatly to the wonderful success of the meeting and won the respect and regard of our members.

The House of Delegates attended to business.

The Knoxville doctors did everything for the pleasure and convenience of the visitors and showed themselves to be what they are—game, generous, gracious and going men.

If you didn't go to Knoxville you don't know what you missed. The only way for you to make up for not being there is for you to go to work and do something for the success of your local society this year and get ready for the Nashville meeting next April.

FIRST AID COMMITTEE.

Drs. L. E. Burch, Battle Malone, W. C. Campbell, S. R. Miller, and J. M. Troutt were appointed a First Aid Committee by President Ellett, acting upon a request from Dr. J. C. Bloodgood, Secretary American First Aid Conference.

News Notes and Comment

Dr. H. Clay Long, of East Lake, Hamilton County, Tenn., has accepted a two-year appointment with Bellevue and Allied Hospitals, of New York City.

Dr. Henry Berlin, for nearly thirty years one of Chattanooga's busiest and most loved physicians, died on March 31, 1916. The June Journal will contain some account of his life and work by one of his co-workers of his home city.

Applicants for admission to the Medical Corps of the Navy will be examined at various places on or about June 16. Full information may be had from the Surgeon General of the Navy.

The Samuel D. Gross prize of \$1,500 will be awarded by the Philadelphia Academy of Surgery to the writer of the best original essay on a subject in surgical pathology or surgical practice. Essays will be received until January 1, 1920.

New and Non-Official Remedies, 1916, is ready. This book, issued by the Council of Pharmacy and Chemistry of the A. M. A., is almost a necessity for the doctor who wants to know about new remedies—what they are good for and where to get them—and for the doctor who wants to use the best remedies rather than those with no merit. The book can be had, for one dollar, from the A. M. A., Chicago.

Did you know that there are doctors in Tennessee who admit that they prescribe Wine of Cardui?

Did you know that there are other doctors in Tennessee who defend the manufacture and sale of patent medicines which are widely advertised as being able to do what they themselves know the stuff cannot do?

What is there in this world that can make doctors do what they know they should not do for the benefit of patent medicine makers?

Zemp-Nash-Davis, the world's greatest entertainment team. Address, Knoxville, Tenn.

Dr. Battle Malone, Memphis, was on hand at Knoxville, but was forced to return to his home by reason of illness.

Where is the fellow who said that we could not have a well attended meeting in East Tennessee?

And the other fellows who wrote, telephoned or wired the Secretary to change the place of meeting when the Knoxville hotel burned?

Yes, they wrote, telephoned and telegraphed us, but we "jus' laffed."

Dr. Robert Fagin, Memphis, was married to Miss Hattie McGee, at Baldwyn, Mississippi, on April 2.

Candidates for Assistant Surgeon U. S. P. H. Service will be examined at the Bureau, Washington, and at various U. S. Marine Hospitals on May 31, 1916.

SECTIONAL SOCIETY MEETINGS.

The West Tennessee Medical and Surgical Association will meet at Jackson on May 18, 19. Dr. I. A. McSwain, Paris, is the Secretary.

The semi-annual meeting of the Middle Tennessee Medical Association will be held at Lewisburg, May 18, 19. Dr. Jack Wither-
spoon, Nashville, is the Secretary.

The annual meeting of the Upper Cumberland Medical Society, Dr. E. W. Mabry, Gainesboro, Secretary, will be at Monterey, May, 23, 24.

These are all "going" organizations and their meetings are always worth while.

NEW COUNTIES IN THE FOLD.

The Bradley County Medical Society is now one of the units of the Tennessee State Medical Association, having been organized on March 24.

Dr. J. L. McKenzie is President, Dr. J. L. McClary, Vice-President, and Dr. Dabney Minor, Secretary.

They are all coming in. Hawkins, Wayne, Coffee, Hardin, Decatur and Bradley are all new counties in our organization, but they all seem to "mean business" and if promises pan out some of the older societies must look to their laurels.

The Tennessee State Medical Association as a whole and in its separate units offers welcome to our new county societies.

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J. F. GALLAGHER, M. D., Associate Editor

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NUMBER 2

WHAT RESULTS HAVE THE NEWER TESTS FOR KIDNEY FUNCTION BROUGHT THE INTERNIST?

BY J. B. McELROY,
Memphis, Tenn.

It would seem that the investigation of medical problems is proceeding from a functional rather than from a structural basis at the present time; that pathological physiology is assuming the importance which formerly was bestowed upon pathological anatomy. As evidence, witness the importance which the polygraph, the electrocardiogram, and the sphygmomanometer occupy in the clinic to determine the efficiency of the myocardium; the numerous tests for the external secretions and other functions of the pancreas; the motor meals, the X-ray, and test breakfast to obtain an insight into the functions of the stomach; the iodine number and the excretion of urobilin in the urine and feces to determine the presence of a hypersplenism; the sugar and tetrachlorophthalein tests for hepatic sufficiency. More prominent, however, in recent years than any of these have been the investigations to determine the functional capacity of the kidney. Indeed, so much has been accumulated, both with reference to the tests and to their significance, that a short discussion of the question, "*What Results Have the Newer Tests for Kidney Function Brought the Internist?*" might be of interest.

It has been said that "in the evolution of every science there are three stages to be recognized"—the first, that of its dawn, when, from observation of a few facts, the wide possibilities of the science impress themselves upon the worker

and stimulate the imagination, so that forthwith he proceeds to indulge in wide hypothesis. These, in turn, form the basis of further observation in order that they may be tested, with the result that time and again they are found erroneous or inadequate. With this, a second (reactive) stage becomes manifest, in which it is appreciated that, before sound generalizations or laws can be established, the facts and data of the science must be carefully accumulated and marshaled. It is when this has been accomplished that one can enter upon its third (complete stage), in which an adequate knowledge of the factors involved permits the establishment of general laws.

The first and second periods of the science of testing kidney function have been rather intensively developed in all of the great clinics of this country and abroad; and if the third period has not yet been fully realized, much of advantage has been applied to medical diseases of the kidney.

THE DEVELOPMENT OF FUNCTIONAL KIDNEY TESTS.

In 1881, Fleischer followed the excretion of sodium chloride, nitrogen, and phosphoric acid, and demonstrated that different parts of the kidney show selective excretory function.

In 1887, Bouchard described a method for determining the urotoxic coefficient. From this time until 1904 numerous tests were introduced to test the efficiency of one or both kidneys, among which may be mentioned phloridizin diabetes; the excretion of dye stuffs, such as methylene blue and indigo carmin; the electric conductivity of the body fluids; and tests designed to determine the dilution and concentration powers of the kidney, such as the cryoscopy of the

urine and blood, experimental polyuria, the molecular elimination, and euphyllin polyuria.

In 1904, Schlayer and his coworkers, combining the anatomical and functional method in the study of experimental nephritis in animals, showed that quite different results were obtained in vascular and tubular nephritis. In 1910 they applied these results to the study of nephritis in patients. They were led to adopt the excretion of water and lactose as tests for glomerular function, and sodium chloride and potassium iodide as tests for tubular function.

In 1909, Rowntree and Geraghty introduced phenolsulphonaphthalein as a test for total kidney function, the value of which has pretty generally been confirmed by numerous workers. From the time that Prevost and Dumas found an increase of urea content in the blood after extirpation of the kidneys, numerous observers have sought for various nitrogenous products in the blood to explain uræmia and to account for kidney insufficiency. With the introduction of the micro-chemical methods of Folin and others for the determination of these substances, new impetus has been given to the determination of kidney sufficiency in this direction—e. g., the determination of the rest nitrogen, urea, ammonia nitrogen, uric acid, creatin, creatinin, amino-nitrogen, and residual nitrogen.

In 1909, Wohlgemuth introduced a method to determine the diastatic activity of the urine as a test for kidney function. Ambord suggested the ratio of urea content of the blood and urine as a test for renal function. McLean has modified this to the urea index.

In 1911, Hedinger and Schlayer suggested a renal test meal with definite quantities of salt added. This method has been elaborated by Mosenthal, especially in this country. V. Monakaw suggested a test meal with a definite amount of urea added to study kidney efficiency. Acidosis has been blamed with certain manifestations of renal insufficiency. Fischer, Palmer, Henderson, Selling, and others have studied the relation of the several factors of acid excretion in nephritis. Finally, Butterfield and Erdwunn and Braddock have suggested the determination of the freezing point, the refractive index, the specific gravity, the dry residue, and the protein content of the blood serum as a means of differentiating nephropathies, cardiopathies, and allied conditions.

With so many tests, the question naturally arises: Which are of the most service? Possibly no one of these tests will give all of the information desired as to the complex functions of the kidney; but it has seemed to me, from a study of the literature and my limited experience, that the following tests will offer important knowledge as to the diagnosis, prognosis, and treatment of diseases of the kidney:

(a) Hedinger and Schlayer test meal as elaborated by Mosenthal in the medical clinic of the Johns Hopkins Hospital.

Technic: The patient's total urinary output on an ordinary diet and 2000cc. of fluids is determined the day before the test meal. On the day of the test meal the following nephritis diet is given:

For----- Date-----

- All food is to be salt free.
- Salt for each meal, 2.3 gms. is furnished.
- All food or fluids not taken must be weighed or measured after meals and charted in the spaces below.

Allow no food or fluid of any kind except at mealtimes. Note any mishaps or irregularities that occur in giving the diet or collecting the specimens.

Breakfast.

- Boiled oatmeal, 100 gms. or 3 1-3 oz.-----
- Sugar, 1-3 teaspoonful -----
- Milk, 30cc. or 1 oz.-----
- Two slices of bread, 30 gms. or 1 oz. each-----
- Butter, 20 gms. or 2-3 oz.-----
- Coffee, 160cc. or 5 1-3 oz.-----
- Sugar, 1 teaspoonful, 200cc. or 6 2-3 oz.-----
- Milk, 40cc. or 1 1-3 oz.-----
- Milk, 200cc. or 6 2-3 oz.-----
- Water, 200cc. or 6 2-3 oz.-----

Dinner.

- Meat soup, 180cc. or 6 oz.-----
- Beefsteak, 100 gms. or 3 1-3 oz.-----
- Potatoes (baked, mashed, or boiled), 130 gms. or 4 1-3 oz.
- Green vegetables as desired-----
- Two slices of bread, 30 gms. each or 1 oz.-----
- Butter, 20 gms. or 2-3 oz.-----
- Tea, 180cc. or 6 oz.-----
- Sugar, 1 teaspoonful, 200cc. or 6 1-3 oz.-----
- Milk, 20cc. or 2-3 oz.-----
- Water, 250cc. or 8 1-8 oz.-----
- Pudding, Tapioca or rice, 110 gms. or 3 2-3 oz.-----

Supper.

5 P.M.

- Two eggs cooked in any style-----
- Two slices of bread, 30 gms. or 1 oz.-----

Butter, 20 gms. or 2-3 oz.-----
 Tea, 180cc. or 6 oz.-----
 Sugar, 1 teaspoonful, 200cc. or 6 oz.-----
 Milk, 20cc. or 2-3 oz.-----
 Fruit (stewed or fresh), 1 portion.-----
 Water, 300cc. or 10 oz.-----

8 A.M.

No food or fluid is to be given during the night or until 8 o'clock the next morning (after voiding), when the regular diet is resumed.

The patient is directed to empty bladder at 8 A.M. on the day of test, and this is thrown away. The patient is provided with seven clean bottles, in each of which a few crystals of thymol are placed.

The patient is directed to void at the following hours: 10 A.M., 12 A.M., 2 P.M., 4 P.M., 6 P.M., 8 P.M., and 8 A.M. the next morning.

The specimens are preserved and carried to the laboratory at 8:30 A.M. at the end of test.

The following observations are made:

- (1) Total quantity of each specimen.
- (2) The specific gravity of each specimen (Tycos).
- (3) The total quantity of the day urine.
- (4) The per cent of nitrogen and amount of same in gms. in the day urine (Folin's method).
- (5) The per cent of sodium chloride and amount of same in gms. of the day urine (Volhard's method).
- (6) The total quantity of night urine.
- (7) The specific gravity of the night urine.
- (8) The per cent and amount in gms. of salt and nitrogen in night urine.
- (9) The total amount of day and night urine.
- (10) The total amount of salt and nitrogen in the day and night urine.
- (11) The intake of water, salt, and nitrogen, which in the test meal is 1760cc., 8.5 gms., and 13.4 gms., respectively.

For normal is considered:

- (a) (1) A variation of ten points in the specific gravity of the day urine.
- (2) Total output of urine, about 400cc. less than the intake.
- (3) Total output of nitrogen, about 90 per cent of the intake.
- (4) The total salt should equal the intake except in diarrhoea.
- (5) A night urine of less than 400cc., sp. gr. about 1018, and a nitrogen concentration of 1 per cent or more.

(b) Phenolsulphonephthalein output in 2 hours.

Technic: Have patient drink a glass of water an hour before test and empty bladder immediately before giving the injection. Inject 1cc. (.6 mg.) of phthalein deep into the lumbar muscles. Collect all the urine passed in 2 hours and 10 minutes after injection. Dilute the urine to 1000cc. and alkalinize with 25 per cent NaOH. Quantitate by means of Rowntree and Geraghty's modification of Autrenrith's and Konigsberger's colorimeter. Normal excretion in 2 hours from 50 to 85 per cent.

(c) Nonprotein nitrogen of the blood according to Folin's method—normal, 20 to 40 mg. per 11cc.

(d) Ambord's coefficient $K = \frac{Ur}{\sqrt{D \times \frac{70}{P}} \sqrt{\frac{C}{25}}}$

in which:

ur=Urea per liter of blood, in grms.

D=Urea in urine in 24 hours, in grms.

P=Weight of patient, in kilos.

C=Concentration urea per liter of urine—normal, .06 to .09.

We have rarely used the lactose and potassium iodide tests, and as yet have had no experience with the determination of the factors of acid excretion nor with Butterfield's and Erdwunn and Braddock's methods.

AS AN AID TO DIAGNOSIS.

(a) To determine the sufficiency or insufficiency of the kidneys: Various clinical signs and symptoms have long been regarded as evidence of insufficient functional activity of the kidneys, such as œdema, uræmia, cardiac hypertrophy, hypertension, and the presence of albumin and casts in the urine. But, as Blum says, it is not possible to recognize these symptoms in all cases of insufficiency of the kidneys, for sometimes all of these symptoms are indicated in the etiologic-pathological relations of various kinds; and, again, there are cases of diffuse diseases of the kidney in good compensation in which neither œdema, uræmia, nor cardiac hypertrophy are present. Histological examination shows always, in such cases, disturbance of an inflammatory nature in some areas and compensatory hypertrophy in other areas of the same organ.

It is in such cases that the newer methods offer considerable aid in the detection of insufficiency on the part of the kidney, and conversely sometimes in eliminating the possibility of an in-

sufficiency. Koranyi in the earlier days of functional kidney tests showed that every diseased kidney is associated with an hyposthenuria—an inability to pass a strongly concentrated urine—and also that the power to excrete a more diluted urine is lost as well. These observations have been confirmed by Hedinger and Schlayer and by Mosenthal. So it would seem that we have in the test meal described a method of detecting early kidney insufficiency and conversely excluding it when suspected. This may be illustrated in the following cases:

C. R. S.—Male; White; Age, 45.
Clinical Diagnosis: Gout, with moderate hypertension, no albumin, and rare casts in the urine. The H. and S. nephritic test meal gave the following result:

	Amt.	Sp. Gr.	Phenolsulphonephthalein.			
10 A.M.-----	60cc.	1015	65% in 2 hrs.			
12 M.-----	142cc.	1017				
2 P.M.-----	177cc.	1017				
4 P.M.-----	130cc.	1018				
6 P.M.-----	164cc.	1018				
8 P.M.-----	220cc.	1018				
			Salt.		Nitrogen.	
			%	Gm.	%	
Total Day---	893cc.		.66	5.89	.98	8.792
Total Night---	380cc.	1018	.47	1.78	.91	3.434
Total -----	1273cc.			7.67		12.226
Intake-----	1760cc.			8.5		13.4
	+387cc.			+83		+1.174

Kidney insufficiency is shown only in the markedly fixed specific gravity of the day urine. The next case was in a lady with the clinical diagnosis of psychasthenia. The blood pressure was: Systolic, 120; diastolic, 85. The urine showed no albumin, but an occasional granular cast. Hedinger and Schlayer gave the following result:

	Amt.	Sp. Gr.				
10 A.M.-----	62cc.	1016				
12 M.-----	92cc.	1021				
2 P.M.-----	174cc.	1013				
4 P.M.-----	146cc.	1013				
6 P.M.-----	118cc.	1025				
8 P.M.-----	82cc.	1015				
			Salt.		Nitrogen.	
			%	Gms.	%	Gms.
Day -----	676cc.		.72	4.86	.77	5.34
Night-----	280cc.	1026	.88	2.46	1.32	3.70
Total -----	956cc.			7.32		9.04
Intake -----	1760cc.			8.50		13.40
Balance-----	+804cc.			+1.118		+4.30

The variation in specific gravity of the day urine is normal, there is slight water retention, the salt and nitrogen excretion are normal, and the night urine is normal. No polyuria, normal specific gravity, and nitrogen concentration. The kidney function would not seem to be impaired. Mosenthal states that “various and often easily ascertainable reasons may exist for either retention or an excess of excretion (water), which may lead us to look on these phenomena as presenting no abnormalities.”

(b) In the diagnosis of orthostatic albuminuria Blum has called attention to the fact that functional kidney tests may determine whether an existent albuminuria is due to an orthostatic or so-called “harmless” albuminuria or to a disease of the parenchyma of the kidney; on the other hand, he could separate a group of cases from the usual orthostatic albuminuria, which, after the existence for years of an apparently harmless albuminuria, passed over into a chronic nephritis of the interstitial type. Jehle has shown the importance of the lordotic factor in the etiology of orthostatic albuminuria, and there was an impairment in the salt and water excretion when the patient was in the erect position, which disappeared on assuming the recumbent position. It would appear from the observations of Barker and Smith in a limited number of cases that there was no, or very little, impairment of the kidney for the excretion of phenolsulphonephthalein in the erect position.

(c) To determine the extent of renal or cardiac involvement in cardio-renal cases. Rown-tree and Geraghty have shown that in chronic passive congestion, unassociated with nephritis, the phthalein output may be low, but not usually as when nephritis is associated; but with restoration of compensation, the phthalein goes up.

It is pretty generally agreed that there is very little retention of Rest-N in pure passive congestion, but Foster states that this may occur here. Mosenthal has shown that there is a pretty characteristic response to the test meal during the period of decompensation, during the subsidence of the œdema and after its subsidence. As illustrating the value of the functional tests in this condition may be cited the following cases:

G. M.—Black; Male; Age, 30. (City Hospital.)
Clinical Diagnosis: Chronic endocarditis, mitral regurgitation, myocardial insufficiency. Urine showed albumin and casts.

FUNCTIONAL KIDNEY TEST. H. AND S. NEPHRITIC TEST MEAL.

	Amt.	Sp. Gr.			
10 A.M.-----	188cc.	1029	Phthalein.	T. N. P. N.	
12 M.-----	92cc.	1026	45% in 2 hrs.		
2 P.M.-----	66cc.	1030			
4 P.M.-----	36cc.				
6 P.M.-----	27cc.				
8 P.M.-----	47cc.	1030	Salt.	Nitrogen.	
			% Gms.	% Gms.	
Day -----	456cc.		.09 .401	1.38 6.292	
Night-----	240cc.	1025	1.322	1.77 4.254	
Total -----	696cc.		1.723	10.546	
Intake -----	1760cc.		8.5	13.4	
Balance-----	+1064cc		+6.779	+2.85	

Shows a high fixed specific gravity in the day urine, oliguria, marked salt retention, good nitrogen excretion; normal night urine, and a moderately low sulphonephthalein excretion, characteristic for chronic passive congestion.

H. O.—Black; Male; Age, 60. (City Hospital.)

Clinical Diagnosis: Myocarditis, myocardial insufficiency, oedema, ascites, albumin, fine and coarsely granular casts.

FUNCTIONAL KIDNEY TEST. H. AND S. TEST MEAL.

	Amt.	Sp. Gr.			
10 A.M.-----	63cc.	1027	Phthalein.	T. N. P. N.	
12 M.-----	73cc.	1020	42% in 2 hrs.	40.9 mg.	
2 P.M.-----	112cc.	1023		per 100cc.	
4 P.M.-----	43cc.	1029			
6 P.M.-----	22cc.	1029			
8 P.M.-----	93cc.	1024	Salt.	Nitrogen.	
			% Gms.	% Gms.	
Day -----	406cc.		.32 1.287	1.47 5.720	
Night-----	380cc.	1020	1.83 3.146	1.36 5.185	
Total -----	786cc.		4.433	10.905	
Intake -----	1760cc.		8.5	13.4	
Balance-----	+974cc		+4.067	+2.495	

Shows a moderately high fixed specific gravity of the day urine, oliguria, marked salt retention, adequate nitrogen excretion; normal night urine, slightly decreased phthalein output, and slight increase in rest nitrogen of the blood.

J. E.—Black; Male; Age, 30. (City Hospital.)

Clinical Diagnosis: Chronic nephritis, hypertrophy and dilatation of heart, general chronic passive congestion.

KIDNEY FUNCTIONAL TEST. H. AND S. DIET.

	Amt.	Sp. Gr.			
10 A.M.-----	229cc.	1011	Phthalein.	T. N. P. N.	
12 M.-----	85cc.	1016		48 mg.	
2 P.M.-----	128cc.	1013		per 100cc.	
4 P.M.-----	247cc.	1008			
6 P.M.-----	206cc.	1013			
8 P.M.-----	215cc.	1012	Salt.	Nitrogen.	
			% Gms.	% Gms.	
Day -----	1210cc.		.19 2.353	.43 5.189	
Night-----	1076cc.		.19 2.027	.43 4.606	
Total -----	2286cc.		4.380	9.795	
Intake -----	1760cc.		8.5	13.4	
Balance-----	+526cc.		+4.120	+4.605	

Impression: Tendency to a medium fixed specific gravity in the day urine, total polyuria, salt retention, a fair nitrogen excretion due to the polyuria; night urine, polyuria, low specific gravity, and low nitrogen concentration. Slight increase in rest nitrogen.

The patient died suddenly, and the anatomical diagnosis at autopsy was: Secondary contracted kidney, marked hypertrophy and dilatation of the heart, intracardiac thrombosis, infarction spleen, kidney, and lungs.

J. T.—Black; Male; Age, 32. (City Hospital.)

Clinical Diagnosis: Chronic endocarditis, arterio-sclerotic, aortic regurgitation, hypertrophy and dilatation of the heart, chronic passive congestion, general anasarca, hydrothorax, ascites, urine contained albumin and numerous casts.

KIDNEY FUNCTIONAL TEST. K. AND S. TEST MEAL.

	Amt.	Sp. Gr.			
10 A.M.-----	64cc.	1024	Phthalein.	T. N. P. N.	
12 M.-----	41cc.	1031	30% in 2 hrs.	49	
2 P.M.-----	47cc.	1022			
4 P.M.-----	60cc.	1032			
6 P.M.-----	60cc.	1034			
8 P.M.-----	76cc.	1027	Salt.	Nitrogen.	
			% Gms.	% Gms.	
Day -----	348cc.		.44 1.52	1.7 5.93	
Night-----	104cc.	1032	.34 .34	1.8 1.83	
Total -----	452cc.		1.86	7.76	
Intake -----	1760cc.		8.5	13.4	
Balance-----	+1308cc.		+6.64	+4.64	

Impression: High fixed specific gravity in the day urine, marked oliguria and salt retention, inadequate nitrogen excretion due to oliguria; practically normal night urine, low phthalein, and R.N. increased. Renal insufficiency for chronic passive congestion.

Autopsy: Anatomical Diagnosis. — Arterio-sclerosis, chronic endocarditis, insufficiency of aortic valve, hypertrophy and dilatation of heart,

general chronic passive congestion, slight arterio-sclerotic kidney, hemorrhagic infarction lung, lobar pneumonia.

(d) Can we from the functional tests make a diagnosis of the anatomical lesion in the kidney? Christian states that in eighteen cases of chronic nephritis dying and coming to autopsy at the clinic of the Peter Bent Brigham Hospital, no constant relations have been found between anatomical lesions and renal function in so far as excretion of phenolsulphonephthalein, albumin in the urine, casts, presence or absence of œdema, blood pressure determination, etc., are concerned. Frothingham comes to the same conclusions in analyzing apparently the same cases.

After reading the excellent monograph of Volhard and Fahr, one might think it not a difficult matter to make an anatomical diagnosis of the anatomical lesion from the clinical manifestations and functional tests.

All, however, who have followed the patient from the bedside to the autopsy recognize how difficult a feat this is.

It is pretty generally agreed that from no one of the functional kidney tests, nor any combination of them alone, can an anatomical diagnosis be made. Nor would this be expected; for, as has been pointed out by Mosenthal, that anatomical lesions and changes in physiological activity of the kidney need not parallel one another, that the cause of diminished renal function must be sought for in many directions—the urinary passages, the blood, or the kidney itself. The following case illustrates the truth of these statements:

G. B.—Black; Male; Age, 34. (City Hospital.)
Clinical Diagnosis: Chronic nephritis, myocardial insufficiency, uræmia, stricture of urethra.

H. AND S. MEAL.					
	Amt.	Sp. Gr.			
10 A.M.-----	266cc.	1005	Phthalein.	T. N. P. N.	
12 M.-----	290cc.	1007	Trace.	118.4 mg.	
2 P.M.-----	265cc.	1007		per 100cc.	
4 P.M.-----	231cc.	1007			
6 P.M.-----	100cc.	1007			
8 P.M.-----	177cc.	1007	Salt.	Nitrogen.	
			% Gms.	% Gms.	
Day -----	1289cc.		.21 2.694	.22 2.830	
Night-----	1076cc.	1005	.24 2.582	.25 2.675	
Total -----	2365cc.		5.276	5.505	
Intake -----	1740cc.		8.5	13.00	
Balance-----	+625cc.		+3.224	+7.495	

Note: The markedly fixed low specific gravity, the total polyuria, the low excretion and concentration in salt and nitrogen, the night polyuria, the low specific gravity, the low nitrogen concentration, the extremely low phthalein output, and the markedly excessive nonprotein nitrogen. With this, there was hypertension and albumin and casts in the urine.

Anatomical Diagnosis: Stricture membranous portion of uréthra, double hydro-nephrotic kidneys, hypertrophy and dilatation of the heart, general chronic passive congestion.

(e) Can we classify the nepropathies on a functional basis? Many attempts have been made to do this—as, for example, by Muller, Eppinger, Baarencen, Schlayer and his coworkers, Widal, and others. Some of these attempts have been disproved, others have not been confirmed.

As an Aid to Prognosis: All are agreed that these tests are of great value as to prognosis. Thayer and Snowden have clearly shown this with respect to phenolsulphonephthalein by a comparison of this test with the anatomical lesions in fifty-four cases coming to autopsy. This has also been shown with respect to the other tests—the test meals, nonprotein nitrogen, creatinin, and increased salt retention.

As an Aid to Treatment: Unquestionably the therapy has by these tests been placed upon a more rational and individual basis. They have led to healthy skepticism as to the value of diuretics in nephritis. They have shown that some cases will need a salt-poor diet, that some will need a low protein diet, that a low protein diet should be accompanied by a large water intake, that hypertension is not necessarily an indication for a low protein diet. In fact, our former management has been materially modified, as may be seen from the recent excellent article of Elliott and Janeway.

So that we say that, with care and proper reading, the newer tests for kidney function have brought very beneficial results with respect to the diagnosis, prognosis, and treatment of the nepropathies.

I am indebted to Prof. L. J. Deshea for the salt and nitrogen determinations in the cases reported.

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DISCUSSION ON THE PAPER OF DR. McELROY.

DR. PERRY BROMBERG, Nashville: I desire to congratulate the association upon the very excellent paper that has been presented by Dr. McElroy, and regret that my experience with the tests which the Doctor seems to lay stress upon—namely, the Mosenthal test—has been very limited. We, as practitioners of medicine—those of us who are situated where laboratories are available—can and should, to a very large extent, put into use the tests which have been given us by those who are doing the greatest amount of experimental work; but to those who are practicing medicine in the country districts, such tests are of limited value, because of the limited power to apply them. I dare say that, if carefully carried out on a series of cases, the Mosenthal test would show us a very marked and very direct indication as to treatment and prognosis and as to the anatomical lesion that may exist in the kidney; but if we are to apply them in occasional cases, I dare say they will be of little value.

I was glad to hear Dr. McElroy state how relatively impossible it is to say how much anatomical change has taken place in a kidney by the estimation of its eliminating power of any of the various substances which may be given. Whether we test the output of urea, whether we determine the amount of sodium chloride which has been eliminated or of the nitrogen, it becomes relatively impossible for us to determine how much of the substances are still remaining in the blood. After all, many deny that the indications from the estimation of these substances eliminated by the kidney are of any special value. In fact, Drs. Beckman and Krotoszyner, who have done more work on cryoscopy in this country than any two men, show a disinclination toward the elimination tests, whether it be phthalein, indigo carmine, methylene blue, urea, sodium chloride, or what not, claiming, as they do, that they are not specific or important indications of the kidney function; but they rather indicate that they are able to find out more definitely by blood cryoscopy the amount of changes going on in the kidney. In other words, it is not what the kidney puts out, but what it fails to put out, that affords a special indication.

One important point is the presence of a fixed specific gravity in the cases he has shown you. We have recently been told that a fixed specific

gravity indicates definite pathology. In other words, where a patient has been given an abundance of sodium chloride or nitrogenous food, the specific gravity of the urine should fluctuate in proportion to the amount of those substances which has been taken in; but where the specific gravity remains fixed, it is an indication of definite pathology. Just how much pathology there is, it is difficult to say.

Personally, I think the greatest advance made by all functional tests which we have at our command is rather in prognosis relative to the condition of the kidney or other genito-urinary organs. I readily appreciate and understand that it has been difficult to say in the treatment of the various kidney diseases that these tests have been of great value, but they are doubtless of some value in prognosis. They have been of especial value in determining whether or not it is safe to approach the kidney from a surgical standpoint, or whether some other organ in the body shall be the principal one to bear the burden, such as a prostatectomy or operations upon the aged. For that purpose we do not have a better test than the phthalein test. I heard Dr. Rowntree speak of the relative value of the indigo carmine and phthalein tests, and it was the sense of the American Urological Association, in Philadelphia, a few years ago, that, so far as practical results were concerned, they could more quickly observe and more accurately determine the condition that had taken place with the phthalein test by the average man in his practice than any other test we have. Personally, I know of cases in which the test has been a failure. I know it has been misleading frequently, and I know we cannot pin our faith upon it; but for ordinary average work, where it is not possible, of course, to actually estimate the amount of sodium chloride, to actually estimate the amount of nitrogen eliminated, both in the day and night urine, I know of no test that will give us more reliable information than the phthalein test.

DR. C. J. CARMICHAEL, Knoxville: I have followed Dr. McElroy's paper with intense interest, because I know of no subject in connection with the practice of medicine that is of so much importance to so many people. We have gone hog wild over surgery, and particularly in people who have nephritis.

This paper represents an enormous amount of work, and Dr. McElroy has given us in a con-

cise and practical way a summary of the work done up to the present time.

There is one lesson I get from this paper, and almost any man who is a member of this association can get—namely, that if we are not in a position to carry out the sodium chloride and nitrogen tests which the Doctor has laid stress on, and which require that fewer patients shall be under your control in the hospital and be aided by the laboratory man, we can at least carry out the phthalein test. —There is not a man who cannot carry it out in his own office if he will look up and master the technic of it. As I followed the charts, his phthalein elimination tallies with the other findings.

As Dr. Bromberg has pointed out, there are some errors that will creep in from a diagnostic standpoint, as well as from a prognostic point of view; but I believe in ninety per cent of these cases it will be of more value to us from a diagnostic standpoint than any other methods we have at the present time.

DR. J. B. McELROY, Memphis (closing): There is very little to add, except to refer to the remarks made by Dr. Bromberg with reference to the impracticability of the application of these tests. Now, I do not think it is so impractical or difficult as it might seem at first. I have no difficulty in getting a private patient to take the meal and carry out the directions, and the estimation of the specific gravity of the urine is a simple procedure, provided you do it properly with a good urinometer, and that gives you most of the information. It is not a difficult matter to determine the amount of salt excretion, and you may use any one of the best accurate methods and the ordinary urea method for determination of the nitrogen; so that we believe this test meal gives us the earliest information of insufficiency on the part of the kidney, and it is not such a difficult matter when carried out thoroughly.

Unquestionably, the most valuable single test is the phthalein test; and if, as I said, it is properly carried out, it will result in a great deal of information, both from a diagnostic and prognostic standpoint. You can take longer; but if you will observe the output in cases of decomposition and watch it rise as compensation is restored, you can determine the amount of involvement of the kidney in these cases.

It has been shown, further, from a vast

amount of work which has been done along these lines, that, although there are some cases of nephritis which put out the normal amount of phthalein or the normal amount of nitrogen in the blood, as a rule, however, there will be a very great degree of parallelism between the excretion of phthalein and the nitrogen. Agnew has shown that there very rarely appears the retention of rest nitrogen in the blood before the phthalein point reaches forty; so that I would recommend as a routine for the examination of these cases the phthalein test, and then, if it is below forty, determine the total estimation of rest nitrogen of the blood. Undoubtedly these tests are of great benefit to the surgeon as to the value and importance of the kidney for operation, but we left that part of the subject out purposely.

I think there is very little else to add. Probably I did not emphasize as much as I intended to do the phthalein findings and the total nitrogen findings. It has a bearing on Ambord's coefficient, and, where we can carry it out, it will be of more value in cases of kidney insufficiency than any of the others.

TREATMENT OF SYPHILIS.

BY PERRY BROMBERG, M.D., F.A.C.S.,
Nashville, Tenn.

In 1910 Privy Councillor Ehrlich intrusted into the hands of Dr. Wechsellmann, of the Rudolph Virchow Hospital, of Berlin, his important chemical discovery, dioxydiamidoarsenobenzol; and the reports on 1,400 cases of syphilis treated by him with this remedy were so amazing in their results that the professional world, stirred to the very depths by the enthusiasm of their German brothers, began to rush into print in both medical and lay magazines until the newly discovered remedy became a household word to conjure with. Patients actually demanded of their physician its administration, which they had been led to believe was in truth a remedy by which *sterilizatiomagna* could be obtained. Like the enthusiasm accompanying other important discoveries, in medicine or other arts, men are likely to lose their heads and make rash statements which time alone can correct. It is now six years since this remedy came into general use, and during that time multiplied thousands

have been treated in this country and abroad; the journals still furnish many articles setting forth its value; but there has been felt the sobering effect of time. *Sterilization magna* is now regarded by nearly all as an impossibility. Others deem the remedy alone as curative, but only by repeated injections. Others do not regard the remedy alone as curative, but only when combined with mercury. Is it not time that a critical review of the collective experiences found in testing salvarsan be made, and would not data derived from such review be of benefit? In order to accomplish this, I undertook the task of reviewing the literature, but soon found that it had grown to such enormous proportions, and that the views expressed were at such great divergence, that I gave up the task and decided to make the attempt direct. Accordingly, I addressed eighty of the leading urologists of this country and Canada. I selected men known by all to be competent, many of them members of the American Urological Association, as well as members of the American College of Surgeons, and submitted to them the following list of questions (not having obtained their permission, the names are withheld for obvious reasons):

Given a primary case in which spirochaetes are demonstrated, do you, if possible to do so without injury, excise the chancre?

Do you prefer salvarsan to neosalvarsan?

What method do you prefer for the administration of salvarsan or neo-, and what is your custom as to frequency of administration and dosage?

When do you begin the use of mercury?

What preparation of mercury do you use?

How administered?

For what length of time do you keep your case under treatment?

Do you regard a negative blood Wassermann one year after dismissal an evidence of permanent cure?

How often after dismissal do you require an examination of the blood?

Do you regard as essential a negative C. S. fluid before dismissing the patient as cured?

In your experience, is the luetin reaction reliable?

What significance do you place in a 1+ Wassermann?

In your experience, has the so-called "modern

method" of treatment proven a radical improvement on former methods of treatment?

To the average reader, as well as to the average practitioner who treats this disease, all of the above questions are in a somewhat confused and chaotic state in his mind. For example, take the first question: "Do you excise the chancre in a case of syphilis?" We have been repeatedly told by so-called "authorities" that to do so rids the patient of a nest of spirochaetes, gets rid of a focal point of infection, and makes the probability of cure the greater; while others equally as competent to judge say that it is of no value, for we are only treating locally a phase of a disease which has been constitutional for some time. Relative to the second question, as to the use of salvarsan or neo-, we are in an identically confusing position. Many eminent men prefer one and many prefer the other; one set are satisfied with three doses administered weekly, while others insist upon five or six or eight or twelve, and give them ten days apart or two weeks apart or four days apart, *et cetera, ad infinitum*. The same conditions confront us relative to the use of mercury. One uses the pill; another, bichloride; another, salicylate; another, the ointment; *et cetera*. There seems to be no unanimity as to the preparation, dosage, or time of administration. Some begin the use of mercury at once, others claim that it is contraindicated during the administration of the arsenical preparations. The entire question is beset with so many theories that one who has faithfully followed the trail of the so-called "pioneers" becomes confused and eventually reaches the point where he calls a halt and asks himself: "Am I treating syphilis as it should be treated? Am I following the advice of the majority of the better men, or am I wandering in the dark?" Believing that many of you were in identically the same confused state as I confess I was in, I attempted to formulate the opinions of the leading men of this country in the hope that from such a study I might at least have the guidance of the majority as justification for my opinion, even though the accurate scientific data upon which such opinion might be based was lacking. The gentlemen to whom this questionnaire was sent were universally courteous, and I wish to express my sincere appreciation to them for their kindness in giving me the benefit of their reply. I regret that in several instances the writer failed to sign his name; in

a few others the questions were evidently misunderstood; but I have attempted to formulate in the following chart the opinions expressed by forty-six, who, I would again remind you, are considered the leading men in this country and Canada. Analyzing the opinions as best I can by the most careful consideration, the question of treatment in all of its various phases and modifications is in a state of distressing uncertainty, and depends entirely, or almost entirely, upon the Wassermann test. Treatment is begun in the majority of cases because of the presence of a chancre, with spirochaetes, or because of full secondaries, less often because of some vague condition, as loss of reflex, gastric crisis, vocal-chord changes, etc., in which the blood is referred to the serologist, and a positive report is the signal for rapid-fire treatment. Again, a patient presents himself without clinical signs; he had syphilis twenty years ago, has married, and has a family of healthy children, but is anxious to know if he is well; the blood is sent to the serologist, and the report is returned, faintly positive. In the former, as well as the latter, we are told to continue treatment as long as the blood is positive. I cannot but believe that there is still much to be learned relative to the meaning of changes which are recognized as hemolysis. I am quite convinced that the clinician is fast losing faith and is inclined more every day to pin his faith in the clinical rather than the laboratory evidence. I have reached the conclusion that the serologic evidence should not be given first place, but that treatment should in a very large measure be guided, first, by clinical, and, secondly, by serological evidence. In view of the repeated instances in which definite syphilitic blood is reported negative and obvious nonsyphilitic blood is reported positive, together with the now generally accepted fact that the same blood submitted to several serologists at the same time will get absolute contradictions in about twenty per cent of the cases, I am of the opinion that it is hazardous to the welfare of the patient to pin my faith too firmly to the report of any one man who is doing the Wassermann as a part of his general practice. I think, therefore, that it is very essential to know the ability of the serologist, and it is much better to have two or three good men pass upon a single specimen.

In all instances where clinical evidence is at variance with the serologic, a provocative salvar-

san or neo- should be given and the result corroborated by several observers.

Even in such cases, is it not possible that products capable of generating antibodies may be present, which do not denote a lurking syphilis, but rather the presence of nature's protective agents? If we grant that they do denote syphilis, does the condition warrant a course of treatment sufficiently long and intensive to render his blood negative? And how long must it so remain? The question can be approached from a hundred different angles, and every time one must fall back on his faith in the serologic findings. In order to form an opinion on this question, I have recently had blood tests made upon the following cases, taken as I could find them, without regard to time or manner of treatment. I have also gone over these cases clinically—not in as complete a manner as was possible, but in sufficient detail to have noticed gross changes in heart, kidneys, blood vessels, etc., and the results of these examinations are herewith shown. (Chart No. 1.)

The cases charted above represent only a third of the cases actually selected for this observation, covering cases treated during the past fifteen years; but being unable to get the bloods for a complete serologic examination, I am not including the other sixty cases in this report, though I am sure that the results would not materially alter those found in the thirty cases herewith reported.

From a careful study of the thirty cases it will be seen that those treated ten to fifteen years ago with mercury, either by injection, inunction, or by mouth, show as good results as is shown by the cases treated more recently with salvarsan or neo, and in which the period of mercury administration was shortened.

Relative to the treatment at the present time, I would stress the fact that two points are pretty well established.

First, that the Wassermann reaction is not to be implicitly relied upon, unless a provocative salvarsan or neo is given and the results corroborated by several examinations and by several observers. That it is often negative in the presence of manifest syphilis, as in Case 31, and that it is positive in other conditions than syphilis, should not be forgotten. It is of diagnostic value, secondary in importance, and should only be regarded as a symptom of syphilis. I

do not regard it as a safe guide by which to regulate the treatment, though it is of considerable value, for often in cases whose bloods are negative we are still sure that a return to positive may be expected in a few months if treatment has not been complete and full. In still other cases with unmistakable clinical evidence, but a negative blood, shall we refuse treatment? Certainly not. Every one will concede that in the absence of a positive blood we should go on with treatment. On the other hand, presume the patient to have no obvious clinical signs and with a negative blood who has only been under treatment for forty or sixty days. Shall we proceed with treatment, or is this man well? In our experience we believe that this man is not well, and we are not content to discontinue treatment. To continue to theorize would only tend to lead us into a maze of argument with splendid opinions, apparently well founded, upon both sides.

That the question of treatment is in a somewhat chaotic state will be readily seen by analyzing the replies to the questions sent out. I shall attempt only to discuss them briefly, and will take them up *seriatim*. No. 1 shows seven men out of forty-six who do excise the chancre, provided it can be done without injury; ten apply calomel ointment to the chancre; and the remainder evidently rely upon the constitutional treatment to cure the local sore. It is my opinion that excision should be routine practice; and in cases where it cannot be done without injury, then, in connection with constitutional treatment, we should vigorously treat the local sore with 33 per cent calomel ointment. I shall not consume time with a discussion of the reasons for such advice.

Secondly, of the forty-six charted replies, twenty-seven prefer salvarsan, sixteen prefer neosalvarsan, and four have no choice, believing one preparation as good as the other. In the beginning of this paper I have already intimated what was my attitude relative to these drugs. I do not believe either of them permanently curative; I use them, believing that they materially and profoundly influence the primary sore, as well as influencing the active symptoms occurring in the early secondary period, and in this way are of marked prophylactic value. That they exercise a powerful effect upon the blood Wassermann, either in the early or in the later stages of a syphilitic infection, no one can deny; but experience teaches me that this effect is not

permanent. It is evidently also the opinion of those whom I have questioned, for in no single instance is arsenic relied upon exclusively, but all use mercury in connection.

The method of administering the arsenicals seems to have more uniformity, as forty-four use the intravenous and only two the intramuscular route; two others believe the intramuscular more efficient, but do not use it on account of the pain.

As to the number of doses and the frequency of its administration, nine of the twenty-seven preferring salvarsan begin with a full dose and repeat it once a week for four weeks, fifteen fail to state the frequency of administration, and three prefer to be influenced by clinical and serological evidence, both as to dose and frequency. The same fluctuation of opinion as to dosage and frequency applies equally to both salvarsan and neo. Glancing over the chart, we observe that—

One prefers a dose every two days until four doses are given.

Two prefer a dose every four days until three or four doses are given.

Fourteen prefer a dose every seven days until three to six doses are given.

Four prefer a dose every fourteen to twenty-one days, number of doses not stated.

One prefers a dose every thirty days, number of doses not stated.

One prefers a dose every ninety days, number of doses not stated.

So we have here the very wide variation of opinion as to frequency of administration, ranging from two to ninety days.

It is well enough to advise that we be guided by the Wassermann, by the accurate estimate of the elimination through the kidney, or by the clinical signs; but the average practitioner who is treating syphilis must have some idea given him by those supposed to know, for he is not able to make daily analyses of the urine or to have repeated blood Wassermanns. I regret that I am still unable to definitely fix a standard that would be safe in all cases; but, again quoting the majority, I will say that opinion seems to favor the administration of salvarsan in full doses, and that they be repeated every week for at least four weeks. It is, I think, the opinion of the better men that salvarsan is more efficient than neo, but slightly more toxic.

Name	Date	Symptoms	Treatment	How Given	Progress of case	Complications created	Wassermann	Result of recent physical examination
M.R.	1900	Full secondary	Pill Protoiodide and mix. treatment.	3 mo treatment 3 " rest, Full 2 yrs.	13 yrs. later, ulcer on os uterine, + Wassermann	2 infra-mass. Salvarsan weekly, 1 yr.	negative, March 1915	negative
J.M.	1901	"	Very irregular with Pill Protoiodide	Salvarsan 1000 mg. treatment weekly 3 yrs	Severe headaches 1914	none	negative	normal, but for occasional severe headaches
S.S.	1909	"	Full doses with Salvarsan of Hg Pill Protoiodide & KI	3 mo treatment 3 " rest 3 " treatment 3 " rest	normal	"	negative	negative has no more skin
J.J.	1908	"	3 yrs with alternating iodides & protiodides, tonics & mixed treatment	"	"	"	"	negative
W.M.	1913	chancre spirochetes	intramuscular salvarsan. Hg hypodermic for 3 mo. intravenous neo 1000 - 1000 3 mo	"	Chancres returned 3 mo after after intravenous 1000 at some locations	chancres disappearing after intravenous 1000 at some locations	"	"
Mrs. P.L.W. (D. T. 1914)	1914	chancre spirochetes Full secondary	12 injections Salvarsan 1000 - 1000 3 mo	Hypo weekly for 3 mo. Injections daily, 40 doses	Normal	none	4 +	"
C.C.	1905	Full secondary	Full 3 yrs treat with pills Hypo and tonics	"	married has healthy child with blood neg.	"	negative 1914	"
B.M.C.	1912	chancre Full secondary	3 doses Salvarsan weekly intervals 20 injections Hg Salicylate, Protoiodide.	Protoiodide 3 mo intervals, 2 yrs.	normal	none	negative	negative
Mrs. H.	1914	Full secondary mixed treatment	2 doses neo, Hypo Salicylate	Hypo weekly mixed treatment for 3 mo	"	"	"	"
R.R.	1913	"	2 doses 606 12 injections Salicylate Hg	Weekly intervals	1914 papular syphilide blood 3+	syphilides disappeared after 30 injections neo with 40 rubs	1+	"
S.S.	1911	chancre spirochetes pos. Wassermann	Salvarsan Hg Salicylate & mixed treatment	1 dose 606 10 injections Salicylate Hg at intervals for 1 yr	713 blood pos.	Oxyganate Hypo 600 injections	negative Jan 1915	"
J.D.	1912	chancre spirochetes cyanide	606 Hg Salicylate & Oxy	2 doses 606 Hg at irregular intervals for 4 mo	Left City	none	negative	"
S.D.	1913	Full secondary	3 doses 606 3 injections Salicylate	weekly intervals	Left for another physician who gave mixed treatment for few mo.	paralysis of vocal cords	4 +	paralysis of cords, maculopapular syphilide
G.K.	1914	chancre urethra Full secondary	40 injections Hg	weekly neo in full dose intravenous	Normal	none	negative	negative
F.B.C.	1914	Full secondary	40 injections Hg 24 doses oxyganate	neo weekly in full doses intravenous injections & Hypo	"	"	negative Jan 1915	"
R.F.T.	1912	"	intramuscular 606 intravenous 12 injections of Salicylate	606 intramuscularly 1 mo later intravenous Hg as usual	"	Blood examined 1914 2+ 3 mo given 6 rubs	negative	"
J.D.	1914	chancre spirochetes	chancre 3 full doses neo 140 injections	neo weekly full dose Hg daily 7 1/2 to 30	"	none	"	"
L.B.W.	1911	chancre secondary by mouth	2 doses 606 Hg Hypo and Salicylate	weekly full dose Hg as usual	"	"	negative	"
J.L.D.	1913	chancre spirochetes	2 doses 606 3 injections Salicylate	weekly intervals	Left for California	"	"	Returned 1915 negative
J.R.	1913	chancre Full secondary	3 full doses neo 40 injections Hypo oxyganate 3 mo	Weekly intervals 40 injections weekly	normal	none	negative	spontaneous glands palpable
B.M.C.	1912	"	3 full doses 606 Hg 10 injections Salicylate 10 injections daily	injections daily	"	"	"	negative
G.K.D.	1912	"	Pill Protoiodide Hg Salicylate	Hypo 3 mo intervals	"	"	"	"
M.W.	1903	"	Mixed Pill Protoiodide	3 mo treatment 3 " rest Full 2 yrs.	"	"	"	"
H.L.S.	1914	chancre spirochetes	3 injections Neo, 40 Hg rubs 200 pills protoiodide	weekly intervals Full dosage	"	"	"	"
J.T.C.	1914	"	4 doses Neo 40 rubs Hg 12 injections Oxyganate	"	"	"	"	"
P.D.	1905	Full secondary	Full protoiodide very indifferent - mixed treatment about 3 mo	Indifferently	developed skin 3 injections 000-40 regular in 1913	3 injections 000-40 Hg rubs - 12 rubs healed	3 +	"
N.W.	1910	chancre spirochetes	1 full dose 606 (no Hg)	Intravenous	normal	1915 General skin spots especially on face	"	negative except on face
A.S.	1910	Full secondary	Hg & Bichloride 15 mo	Fairly regularly	"	none	negative	negative
I.D.S.	1909	" pos. Wassermann	Hg Hypo alternating with iodide of K for 1 yr	regularly	"	"	"	"
S.S.	1908	secondary	Pill protoiodide Hg Salicylate 2 yrs. KI.	"	"	"	"	"
S.A.	1914	Full secondary	3 doses Neo 20 injections Hg oxyganate	Weekly intervals	"	none	negative	"

MERCURY.

When shall its use be begun? What preparation shall we select? How shall it be administered? How long continued?

Again referring to the chart, we observe nineteen of the forty-six beginning the use of mercury at once—that is, as soon as the diagnosis of syphilis has been made; four begin the use of mercury one week after the first dose of salvarsan or neo has been given; four, two weeks after the first dose; one, after a negative blood has been obtained by the use of the arsenicals; the remainder, after several doses of salvarsan or neo has been given, varying from one to four months from the date of diagnosis.

The preparation used in the order of frequency favors the salicylate with twenty-two; gray oil, nine; ointment, nine; with an occasional preference for bichloride, biniodide, protoiodide, succinamide, oxycyanate, and calomel. Several use all preparations; others, a combination of the above, etc.

Relative to the method of administration, thirty-four prefer to give it intramuscularly, eight by inunction, and four by mouth.

As to the length of treatment, eleven continue to treat for two or three years; the blood decides the period of treatment for twenty-eight; the remainder treat for varying periods, fluctuating from twelve months to many years.

In attempting a satisfactory reply to these queries, it is obvious that differences of opinion will exist here as elsewhere, so long as men are of many minds; but I fail to appreciate the necessity for waiting until after a course of arsenic, covering several weeks, has been completed, before instituting mercurial treatment. That the combined treatment is the more efficient, I think no one will deny; but we should not forget that mercury alone is capable of curing syphilis. That all of the men consulted used the combined method of treatment, none relying entirely upon salvarsan or neo, shows, I think, a lack of confidence in the arsenicals.

It is, in my opinion, largely a matter of individual preference as to the preparation used, the method of administering it, or the length of time it is to be continued; for, as stated before, this question can only be determined by repeated examination of the blood; and, in the light of present-day evidence, the profession is compelled to accept this as final. The ion Hg is the effective

agent which cures syphilis, and it is entirely immaterial in the minds of many as to how or in what manner it reaches the spirochæte. Metallic mercury has been used since Columbus returned with his sailors from America, and to the present day it has held its place against all rivals. One of the earliest methods of its administration was by inunction, and to-day inunction and intramuscular injection of the insoluble salts are regarded by the vast majority as the most efficient methods of administration. I do not mean that other forms of the drug or other methods of administration are not efficacious; on the contrary, syphilis may be successfully treated by a great variety of forms and methods.

I am inclined rather to believe that variations in preparation and method are rather advisable in the management of a case, and certainly indications may arise at any time which actually demand a change from one to the other. At the present time I am rather strongly inclined to agree with those using mercury by inunction, and for the past three or four years have confined my use of this drug largely to this method. I use the salicylate, bichloride, oxycyanate, and other preparations where conditions demand. Certainly one would not be content with this method prescribed for a long-befuddled prostitute who would not obey your instructions. Next in value to the inunction method, I prefer the intramuscular injection of salicylate or gray oil. I shall not consume your time with the details of their administration, which I am quite sure are familiar to all.

The question of how long to continue the treatment is, in my opinion, the hardest of all to answer, and again we are compelled to fall back on the laboratory for advice. That one year may be sufficient is unquestionably true in many cases; that two years will be required in others; and still three or four or five years may occasionally be demanded, cannot be questioned. Since, after all, the blood is to decide this question, how often after dismissal shall we have the blood examined?

How long shall we continue these examinations?

Only to-day a colleague called me relative to a patient who began treatment in 1911, had four doses of salvarsan, two intramuscular and two intravenous, with hypodermic of mercury for two years at intervals, one whom I regarded as well

treated and whose blood was negative one year and six months ago, stating that he found evidence of aortic disease, which he attributed to syphilis. This man is listed in my chart as a cured case, because I could find no evidence one year ago, or even six months ago, of syphilis, and his blood was negative. He was dismissed two years ago, and has had blood Wassermanns every six months since.

Again referring this question to the chart, we find seven of the forty-six who are willing to accept a negative blood Wassermann one year after dismissal as evidence of cure. The remainder do not so regard it.

As to the frequency of blood examinations after dismissal, two require monthly examinations for one year, eighteen require the blood examined every three months during the first year, two every six months during the second year and occasionally thereafter, the remainder fluctuate from six months to eighteen months between blood examinations. To the average man with syphilis the price of blood examinations is a factor to be considered, fifteen dollars being the customary charge in Nashville. This prohibits the examination as frequently as may be desired. Without further discussing this phase, however, I would say that patients after dismissal should return every three months for careful physical examination, to which should be added the Wassermann if practicable, during the first year after dismissal, every six months for the next two years, and at least once a year for the following five.

The time which the paper has already consumed prevents a discussion of the other question asked at any length. I will simply say in reply to the query, "Do you regard as essential a negative C.S. fluid before dismissing your patient as cured?" that the recognized impracticability of such a course makes nearly all agree that it is best, where it can be successfully accomplished. Relative to the luetin test, few have experience with the test in its relationship to treatment. The significance of a 1+ Wassermann has already been discussed. The opinions expressed show conclusively that nearly all want corroboration by several observers.

Are modern methods an improvement?

Three unhesitatingly say, "No;" the remainder, "Yes;" a few think time alone can answer.

DISCUSSION ON THE PAPER OF DR. BROMBERG.

DR. G. VICTOR WILLIAMS, Chattanooga: I have enjoyed this most interesting paper, and I want to say that I think the general practitioner in treating syphilis in the past has been giving an occasional shot of arsenic, and he has been giving this just "any old time," and a few months apart, and not following with mercury and waiting for symptoms to develop. That is just as bad as the Hot Springs treatment for syphilis. It has been said that the majority of patients that go there are benefited for a while; and as soon as their finances are exhausted and it is realized that they are stranded, they are told that they had better leave and come back in six months or a year. It takes such patients about six months to get some money before they return for treatment. Such patients are helped each time they go there, but they will never be cured.

In relation to the Wassermann test, while the Wassermann test is a good thing in the eyes of many practitioners, we should not disregard the clinical symptoms. Practitioners have probably a case before them which is as plain as anything can be; but even then they are in doubt and want the patient to pay fifteen dollars for a Wassermann test, which is really only another symptom. I certainly think we should go on the clinical symptoms in the majority of cases.

In some cases, especially the tertiary, where the clinical symptoms are suspicious of syphilis, but the patient does not remember exactly and we have no clear history of the primary or secondary stages to back us up—there is where we should, I think, use the Wassermann or luetin tests to confirm our suspicions. I hope the new luetin test will be of more value than even the Wassermann test, because it is simpler.

In the treatment of the disease by the use of arsenic, I am encouraged by what Murphy says concerning the use of cacodylate of soda. My experience, which is limited, does not back up what he says regarding its use subcutaneously, which were small doses too far apart. I have not gotten any benefits, except the patient was taking mercury at the time. I am using it intravenously now and in larger doses and repeated much oftener, and am getting better results in that way. I believe it will be the form of arsenic

by choice in the treatment of syphilis, as it contains 38 per cent more arsenic than salvarsan and can be given intravenously in two to seven times the dose of the maximum dose of 6 gram of salvarsan.

There are two things in the treatment of syphilis to remember, one of which is that arsenic is a great thing for its temporary spectacular effect; second, we know that mercury, as Dr. Bromberg's paper shows, is a sheet anchor; and I think if we follow arsenic with mercury in the proper doses and give them close together, we are bound to get the best results that can be obtained for the patient.

DR. W. K. SHEDDAN, Columbia: I hesitate very much to discuss this subject or to take issue with men who are engaged in this special line of work. However, I want to discuss the subject from the standpoint of a victim as well as one who has treated it. I have had my experience with the disease. I contracted syphilis in 1902. I took mercury religiously for five years continuously. I kept up seemingly the use of mercury for possibly two or three more years, and, so far as could be determined, all probable evidences of syphilis were apparently gone; yet there were certain symptoms and certain conditions present in my own case, and I will discuss the subject from my personal experience with the disease. There were certain mental conditions especially in my case, but I do not know whether my professional friends recognized them or not. However, there were certain changes in disposition and character which persisted with me from the time I got infected during the whole time, notwithstanding my physical condition was good and I weighed more than at any other time. I had a certain amount of depression and distress and annoyances connected with the disease, and I took mercury. I want to make the statement that mercury will cure it, although I did not believe it. I took mercury for five years religiously and continuously. I took it by mouth, by inunction, and every way, and kept it up according to the suggestion of Keyes years ago.

A year ago last May I went down sick, and for several months prior to that, at the time of the meeting of the Tennessee State Medical Association at Nashville, I was off my feet. I dragged on until the thirteenth day of May. I went to bed, and two capable young men were my attendants. They were at sea to a very

marked extent, although they knew I had syphilitic infection and knew the length of time I had taken mercury. The question was: Did I have typhoid fever? Did I have malarial fever? Or what was the matter with me? So far as I am concerned, I did not know anything about it at that time. I was running a temperature, I suppose, from what I have heard since. A specimen of my blood was submitted to Dr. Litterer for examination for the Weidal test. I discussed the proposition of making a Wassermann and of whether mercury had cured me or not. Dr. Litterer, after making examinations of the blood for typhoid and malaria, declared them both negative, and proceeded to make a Wassermann, and found a four-plus Wassermann. I had taken mercury continuously and religiously for five years, then at intervals twice a year for three or four more years. Dr. Litterer knew this, and the professional men of Maury County were very skeptical about the use of arsenical compounds and rather skeptical about the newer things. Dr. Litterer came to see me, and in my condition I argued the matter whether to take it or not; but he finally himself forced it on me, and I took neosalvarsan. I took five doses within five weeks. At the end of the fifth week, two weeks after the fifth dose, he made another Wassermann, which was negative. He cut me off of everything. I have not taken anything since. I have had a Wassermann made once every two months, the last one having been made recently and reported to me on last Saturday as negative.

So far as my own personal observations, sensations, and feelings are concerned, the only time I felt normal since I contracted that infection fifteen years ago was since I got out of bed.

I believe the Wassermann test is of inestimable value in a great many cases. I think if I had had a Wassermann test made I would have been saved this experience. I believe that the Wassermann test as made by some men is not very valuable, and I say now that I would not give a cent for a Wassermann test unless I knew the man making it, unless I knew his method and his ability, his honesty, and everything connected with his work. The Wassermann test, made by the proper man and the proper environment and proper surroundings, is an invaluable test.

Those of us who are engaged in general practice have cases come under our observation—cases of nervous disease—concerning which we

are at sea. I have two cases in my own town in point that Dr. Witt saw with me, in which there was no history of syphilis, never any history of initial sore or secondaries; yet cerebral conditions developed; the lesions were disseminated in type, but the diagnosis was obscure. [Time called.]

DR. M. HAASE, Memphis: Dr. Bromberg has covered the subject so completely that he leaves very little for discussion.

I would like to emphasize what he has said in regard to not depending upon the Wassermann test where you have the clinical manifestations of the disease sufficient for you to believe that syphilis exists. In my own practice I have my own laboratory for making the Wassermann test, but both in private and clinical work I have seen unquestionable manifestations of syphilis clinically in which the Wassermann test was negative, and not alone in my own laboratory, because we have a rather peculiarly happy method of doing Wassermans in Memphis. We have three laboratories, and we send to each other each week some blood. The laboratory drawing blood once a week sends samples to the other two. We are governed by the reports which come from these three laboratories to see if they are working harmoniously. In that way we check up our own work and assist others in checking up theirs. This we have found to be an excellent method. Should one of these laboratories give a negative report and the other two a positive report, then the three laboratories get together and find out by titrating reagents what the trouble is. We keep the three laboratories running Wassermans in a most excellent condition.

As regards the treatment of syphilis by mercury and salvarsan or arsenical preparations, I wish to say that I have absolutely no faith in cacodylate of sodium. This was tried out in the City Hospital of Memphis on eight cases; and, by the way, the City Hospital of Memphis invites syphilis cases into its wards, and there it is treated by the same methods exactly as it is treated in private practice. Eight cases of secondary syphilis were taken into the wards of the City Hospital, and cacodylate of sodium was used, and a Wassermann was taken every month. Of these eight cases, five gave a negative Wassermann. So I have no faith in the cacodylate of sodium in the treatment of syphilis.

In the treatment of syphilis I unhesitatingly

say that, in my opinion, the administration of mercury will cure syphilis, but I am opposed to the giving of mercury by mouth. Whether mercury given by mouth cures syphilis or not, I am not prepared to say, because we need to keep these patients under continuous observation, and I have no doubt eighty per cent of the cases of syphilis will have the clinical manifestations to disappear, and the fear of the disease will be somewhat lessened; but they will quit taking it or they take it with irregularity. The treatment should be given by the physician himself.

If laboratories controlled each other more frequently, we would have less of these faulty findings in the laboratories used generally by the general practitioner.

There is a personal element in making a Wasserman test. As to the advertisements in the journals which we see so frequently of a Wassermann test being made for five dollars by such and such a laboratory, I do not think, if I were a general practitioner, I would use them at all. A specimen of blood is sent there, and you have not the slightest idea who is handling the serum.

DR. HERMAN J. BARNETT, Chattanooga: I want to commend the essayist on the great amount of work he has done in tabulating the opinions of a great many different practitioners on the several cases they have had. I desire to call your attention to the fact that you can hardly get any disease or any infection that will affect two individuals exactly the same. We all of us find variations in the virulence of the spirochæte. We have the various strains. We have in America a great many people that are almost as much syphilized as they are civilized, and it seems to me that it is absolutely preposterous to get men from Maine and California or from the Canadian borders to the Gulf Coast to agree on a specific method of treating a specific disease, because we have no specifics. Of course we do have the spirochæte as the cause of syphilis. We have the tubercle bacilli as the cause of tuberculosis; but we know that almost every one during the average life of man is infected with tuberculosis, and we know that it affects them almost always in a different manner.

Now, we have cases of syphilis that seem to affect bones almost entirely to the exclusion of syphilis in other organs. There must be a reason for this. We have other cases in which the dis-

ease seems to affect the skin only, and we have seen cases of syphilis that had no primary lesion, no secondaries, and we have had glandular syphilis with a four-plus Wasserman without any history of the disease whatsoever.

Considering all these things, I cannot see how we can reasonably expect syphilographers to agree.

There is another error made in the treatment of syphilis—namely, that mercury is a specific. I have seen individuals treated with mercury in whom the symptoms seemed to get worse under all methods of administration, and I have seen cases that did not do well on 606. There can be no specific treatment for syphilis; there never has been and never will be. A great mistake being made by the profession to-day and in the past is that in treating syphilis we are prone to forget we have a patient and treat syphilis entirely. I have had in my experience cases suffering with abdominal conditions showing all symptoms that might have been readily diagnosed as syphilis if not for the history of the cases, and those patients cleared up after the administration of a few purgatives. I have seen others who have taken mercury and various patent-medicine cures for as long as twenty years, and I doubt very much whether they had ever had syphilis. We are prone to attribute anything that a man ever had following a syphilitic infection to syphilis, and we do not study our cases. I do not believe that it is now possible, or that it will ever be possible, to have a specific for a disease that is so peculiar in its generalization. We cannot hope to have all cases exactly alike, and we cannot have two treatments or one treatment for the disease.

DR. WILLIAM LITTERER, Nashville: I am sorry I did not hear Dr. Bromberg's paper, but I know his general views in regard to this matter.

Concerning the Wassermann reaction, I think it is valuable sometimes. I would not say it is absolutely infallible, but it is by far the best test we have of syphilis. Of course it is not a specific test, like finding the spirochæte in the lesion; but if the test is made properly, I believe it is as near infallible as almost any of the tests outside of finding the specific microorganism. It is true that there are so many technics, so many different methods and different modifications of the Wassermann reaction, that it is no wonder we get discrepancies in results. We do get great

variations. The technic is so long that some error is likely to creep in. However, this error is very little, because you can split the serum and make it by a certain method, and that test will come out practically exactly.

I have been appointed by the Southern Medical Association on the investigation of the standardization of the Wassermann test. Nothing is more important than that. We are working along the line of different methods of standardizing our reagents. We never had this trouble as to the discrepancy in the Wassermann test five or six years ago, because there was the old original Wassermann in which all reagents were standardized. Now there are so many short cuts and preservation of antigens and complements, and so forth, that they are liable to deteriorate. They detect granules, and, instead of titrating and testing the reagents, they put them in and then trust to luck. I think most of us who make Wassermann tests have done that in the past. In the old Wassermann all the reagents were so unstable that we had to titrate.

Dr. Barnett brought out a point which is of great importance—namely, that we cannot treat these cases in a routine manner. Undoubtedly there are some cases that are refractory to mercury; there are many cases refractory to arsenic; and you have simply to test your case and treat the patient with one and then with the other. I believe mercury is a specific in quite a number of cases, but I do not believe it is in all. I think I have seen cases where mercury has absolutely failed and 606 does not do the work. I think the particular spirochæte is refractory to mercury in that particular case. We have undoubtedly many different kinds of spirochætes—some that attack the nervous system, others the skin, bones, etc.

As to when syphilis is cured, that is a great problem, and it will be many years before we find out. Craig has laid down the rule that we should take a Wassermann every six months for several years, and before pronouncing a patient cured of syphilis we should take the cerebrospinal fluid, run it through globulin and albumin, and make a Wasserman test, and, in addition to that, try the luetin test, and, as a final test, use a provocative Wassermann. That is almost prohibitive; but that, he says, is ideal.

Let me say a word or two more concerning treatment. Craig's assistant at Fort Leaven-

worth, Kan., made a Wassermann of fifty cases, in which he tried injections of salicylate of mercury, and found in not a single case was the Wassermann obliterated, showing that the injection of salicylate of mercury was of no value.

DR. PERRY BROMBERG, Nashville (closing): I agree with what Dr. Barnett has said—that syphilis is not a specific disease that can be cured by a specific remedy, and that no one remedy will cure syphilis is a recognized and well-established fact, because it is such a variable disease in the virulence of the spirochæte and the affinity of the spirochæte for particular tissues or for a particular type of tissues in the body. I think we all concede that. We know that very well.

I was one of the early men to begin the use of salvarsan when Professor Ehrlich gave us his astounding discovery. Of all contributions to medicine at the London Congress, perhaps there was no greater contribution than his. But salvarsan has absolutely failed to prove to me that it is permanently curative of syphilis, which I have shown in a hundred cases I have had the pleasure of examining within the past year.

I would not have it understood that I condemned the Wassermann test. I use it in all cases, and rely upon it to a large extent as being the most frequent and most valuable symptom of syphilis; but I do not regard it as everything. The clinical evidence weighs heavier with me than the laboratory evidence, and I agree with Dr. Haase that all laboratory evidence should be checked up by several observers under all circumstances, and, where it is possible to do so, a provocative neosalvarsan should be given.

I do not believe mercury will cure all cases of syphilis; I do not believe salvarsan will cure all cases of syphilis, and I may doubt whether it may cure permanently any case of syphilis.

I probably am the first, so far as I know, to point out from my results and experience that salvarsan is not a very efficient method of treating syphilis, that it should not be relied on absolutely, and that the Wasserman test is not as reliable as a great many practitioners think. Let us take New York. In that city more than twenty per cent of absolute contradictions were found where blood was sent to two or three laboratories for examination. One laboratory reported the test positive and another negative. The average of forty-eight per cent of bloods in the report is four plus, and by another one is two

plus, the amount of hemolysis having varied to such a great extent.

Dr. Sheddan said he had fever, and his blood was examined for typhoid and paratyphoid. His symptoms were not suggestive of late tertiary syphilis cured. Arsenic would make him feel better, knowing that he had syphilis twenty years ago. I do not believe that his case is any argument at all. We know that one swallow does not make a summer.

THE PUBLIC HEALTH SITUATION AS PORTRAYED BY MORTALITY RECORDS.

BY H. H. SHOULDERS, M.D.,
Nashville, Tenn.

Before beginning a discussion of the data we have with reference to mortality in Tennessee, we will refer briefly to some general considerations concerning statistical data.

The old statement to the effect that there are three kinds of lies—lies, damn lies, and statistics—is occasionally still quoted and is occasionally justified. It would be well, however, if we would also remember this trite philosophy: "Figures don't lie, but liars do figure."

Much of the statistical data available at the time the first statement was coined consisted largely of individual estimates, or was individual statistics. In many instances such data has really consisted of a collection of figures with reference to the work done by some one man who, as a rule, also collected the data. However honest he might be, we must concede that the personal interest he would take in the end results to be achieved is operative, and that it is a wonderfully powerful, persuasive influence.

Clinics report results from certain work, and prove it by individual statistics; individuals report results from this or that treatment, and prove its superiority over other treatments by the statistics compiled by the individuals interested in exploiting the method. So it is proper that a certain amount of skepticism surround such reports.

Mortality statistics may not represent the conditions of a community absolutely accurately; they do, however, represent the collective opin-

ions of the entire profession of medicine of the state as to the causes of the deaths, and their opinions are unbiased by any hopes of individual glory in the matter, and, therefore, must be conceded to be the best evidence available regarding the conditions under consideration.

COMPLETENESS OF REGISTRATION.—There are a few remarks which should be made with regard to the general completeness of death reg-

to be presented are comparable with those of any community in the world having efficient death registration.

PORTRAYAL OF CONDITIONS.—Doctors recognize that when a death from certain diseases—such as typhoid fever, tuberculosis, or diphtheria—occurs, certain conditions, or groups of conditions, have brought about the illness. Likewise with regard to all other preventable diseases.

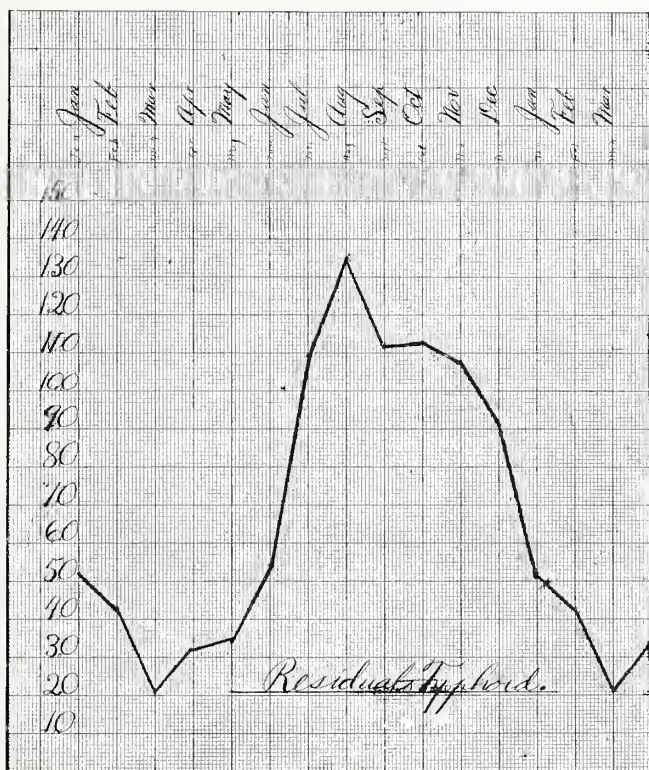


Fig. 1.

Fig. 1. Note that 21 deaths occurred in March, a winter month, and that 135 deaths occurred in August, a summer month. Contact is as dangerous in winter as in summer. Cold doesn't destroy the germs, so water contamination should be as dangerous in winter as in summer. The fly, then, is the factor which determines our summer typhoid death rate.

istration in the state. Tennessee's death rate for 1915 was 13.8 (still births included). If still births had been excluded, the rate would be about 13. The death rate of the registration area for the year 1914 was 13.6. That of the rural part of the registration area in 1913 was 12.7. Tennessee is composed chiefly of rural population, and the latter rate would be fair for comparison. The average of all registration states was 13.4. These comparisons, together with other proof which might be cited, amply support the idea that Tennessee has efficient death registration, which means that the figures

The death rate of any given political unit—state, county, or municipality—from any preventable diseases, therefore, portrays the conditions of the community which contribute to the preventable deaths.

Death registration, then, is the recording of end results; and it is from a careful study of these records that we are able to stimulate the community to a consciousness of the existence of conditions which bring about the unfortunate end results. We do not hold up to view the skeletons of the dead for sentimental reasons, nor to make us more conscious of the loss at this

time, but rather to call to mind in the most impressive manner possible the conditions which are operative and which continue to be operative in hazarding the lives of our citizens.

There occurred, in round numbers, 32,000 deaths in Tennessee in 1915. The number of deaths from each of a group of *preventable causes* was as follows:

Typhoid fever	906
Tuberculosis	4,499
Pellagra	840
Malaria	491
Scarlet fever	33
Measles	22
Whooping cough	157
Diphtheria	489
Smallpox	42
Diarrhœa and enteritis of infants under two years of age.....	1,112
Puerperal septicæmia	161

making a total of 8,752, composing 27.3 per cent of the total deaths. If the deaths of old persons and the unavoidable deaths of very young infants were eliminated from the grand total, the *preventable deaths* would compose at least 50 per cent of the total.

Four of the diseases mentioned in the group of preventable deaths have produced a mortality which in comparison stands out prominently, and they are: tuberculosis, typhoid fever, pellagra, and diarrhœa of infants under two years of age. It will be remembered, too, that all but one of these causes produce death, as a rule, during early adult and middle life. The average age at death from tuberculosis is thirty-four, and typhoid is twenty-eight.

By comparing the death rate of Tennessee from each of these preventable causes with those of other states, we will get a view of the relation which obtains between Tennessee and these other states with respect to the fundamental conditions which cause illnesses.

Typhoid Fever: Tennessee's death rate from this disease in 1915 was 39.8, and in this connection we should state that the rural rate was 41.3 and the city rate 32.4—quite close together. There are two states in the registration area with rates above Tennessee and twenty-one with rates below. The average rate of all registration states was 17.8 for 1913, or less than half the rate of Tennessee in 1915.

We must keep in mind that we are seeing in these death records the inevitable result of a condition. The condition is the thing portrayed.

From our death records we may also view our morbidity. For every death from typhoid fever there have occurred 18 cases. We, therefore, had over 16,000 cases of typhoid fever in Tennessee last year—about 5 cases for each doctor in the state. The conditions which have brought about this illness and mortality are, of course, the insanitary privy on the premises of rural homes, the same conditions in towns, and, strange to say, the same conditions in some of our large cities. In brief, we see human excrement which contains the typhoid germ scattered recklessly all over the state, in rural district, towns, and cities; we see our food and water contaminated with it. As we view the cases, we see ignorant, careless hands visiting and nursing them, and in some rare instances we see careless doctors attending a typhoid patient, diligently and attentively seeing to it that the patient receives his Q. 4 H. salol and turpentine, and in the most casual way directing that care be taken in disposing of the excrement. From the tracing (Fig. 1) we get some valuable suggestions. Why does the curve go up and come down? There are three potent factors in transmitting typhoid—viz., flies, fingers (or contact), and water. Two of these factors operate the year round, the fly only during the summer season. This teaches the relative importance of the factors in transmission, as well as emphasizes the one factor which should always be thought of first—viz., the fly.

Tuberculosis: There were, in round numbers, 4,500 deaths from this disease in 1915, giving a rate of 189.8. White, 2,656, with a rate of 155.2; colored, 1,834, giving a rate of 405.5. In comparison with some other states we find Tennessee holding the position of third from the top. In the light of our more recent conceptions regarding the etiologic factors of the disease, we get a broader view of the general question as portrayed in the mortality records. First, we see 10 living cases for every death that occurred last year, giving us practically 45,000 cases in the state in various stages—from the incipient to the moribund. We see 4,500 sufficiently advanced to die in 1916. We also see as many more sufficiently advanced to die in 1917, making a total of 9,000 sufficiently advanced to die within eighteen months, leaving 36,000 cases in the ear-

lier stages, a large per cent of which will be cured or achieve a spontaneous recovery. Others will gradually await their turn to join the advanced and dying as the years go by. Unfortunately, we will see a great number of the early cases walking away from the doctors' offices with a smile on their pallid cheek, provoked by the assurance the doctor gave that they did not have tuberculosis, which assurance was given because

one single influence, but one which has resulted from a group of interlinking influences which have been operating through all the years of the past. Recent indications are that the story of tuberculosis is to be rewritten; that new interpretations are being placed upon old facts, as well as new facts revealed. Our attention is now being called to the fact that the discovery of germs has



Fig. 2

Fig. 2 shows the typhoid fever death rates of a number of states, including Tennessee. In so doing it portrays the conditions of the states mentioned. The death rate of North Carolina refers to towns and cities of over 1,000 population.

the doctor could not find a cavity in the lung with a stethoscope nor find t. b. in the sputum. The doctor was right (they had neither condition), but was wrong in his deduction that they did not have the process. We also see a great number of the early cases as fathers or mothers, as brides or as grooms; a number as the infected children of tuberculosis parents, in a measure robbed of hope before they were born. We see many in the chilly, dingy, and crowded quarters of poverty. We see in all a problem of great magnitude—not one which has developed among us in a brief space of time, nor as a result of any

served to obscure from our scientific view for a time the fundamental protoplasmic conditions which have so much to do in determining whether or not any given person will die of tuberculosis. When we view the question from the standpoint of end results—which are deaths—many influences are apparent which are not apparent when we view it from other directions. We view practically every person as having the infection, and we see only 15 per cent dying and 85 per cent not dying. Then it is we view the other factors, which determine the question of recovery or death. We must, at the same time,

bear in mind that the quantity of infection also has a bearing in determining the great question.

We now view the question more in the light that the germ appears to always be present when the protoplasm of the individual is vulnerable.

Recent statistical studies show that tuberculosis is far more prevalent among ten-dollars-per-week employees than among fifteen-dollars-per-week employees, which is to be interpreted as in-

prevent the contraction of a greater amount of infection than a reasonable degree of resistance will overcome.

Pellagra: The record of deaths from pellagra forever settles a few questions about the disease, and one is with regard to the disease occurring in the colored race. You know that it has been argued that the negro's skin protected him from certain rays of the sun, which some have pre-

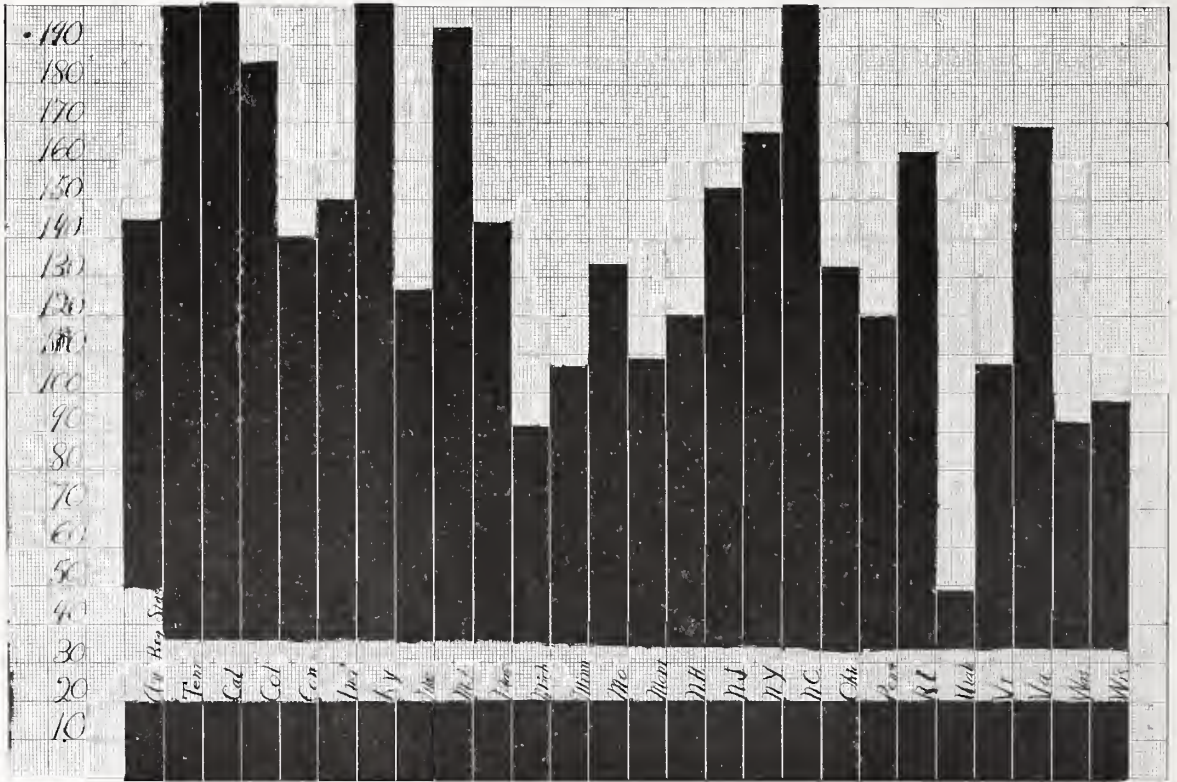


Fig. 3

Fig. 3 shows the death rate of a number of states from tuberculosis. Please compare the rates of other states with that of Tennessee.

Two states—viz., Kentucky and California—show a death rate of over 200. Their exact death rate cannot, therefore, be represented in the above cut.

The rate shown for North Carolina refers only to the average rate of towns and cities of over 1,000 population.

dicating that the very conditions under which the ten-dollars-per-week person lives prepares protoplasm for the infection.

We also see more emphasis placed upon heredity as a factor in producing vulnerable protoplasm. We are taking into more account the many interlinking influences which have to do in determining our death rate from this disease. The work of lowering our death rate from this disease, then, is to be directed toward preventing persons with mild infections and good protoplasm from losing their resistance, as well as to

sumed have to do in producing the disease. Of the 840 deaths from this disease last year (1915), 370 were colored, giving a colored death rate of 78.2 per 100,000, and 470 white, giving a rate of 27.1. The colored rate was almost three times the white rate. The cities of the state gave an average rate of 63.6, and the rural population gave a rate of 31.7. Only fourteen counties escaped a death. The disease, however, prevails to a greater degree in some counties than in others, though it does not harmonize with the typhoid death rate, which, in a measure, detracts

from the idea that the disease is excreta-borne. Pellagra gives a high death rate in counties with low typhoid rate, and vice versa. We are not in position, of course, to say definitely what conditions this death rate indicates. We are, however, in position to say that a few things are indicated. It may be said that there is "one thing we now know about the etiology of pellagra," and that one thing is that poor diet has a definite and potent bearing in its production.

regarding nutrition as a factor. We see, on the one hand, poverty making a dollar go the farthest it will go by buying the cheapest articles of diet (carbohydrates). We see eggs and hams being sold from the modest home in the country to buy cereals, syrups, and hats. In the light of present knowledge, we see in the pellagra death rate a criticism of our economic condition rather than a criticism of our sanitary conditions.

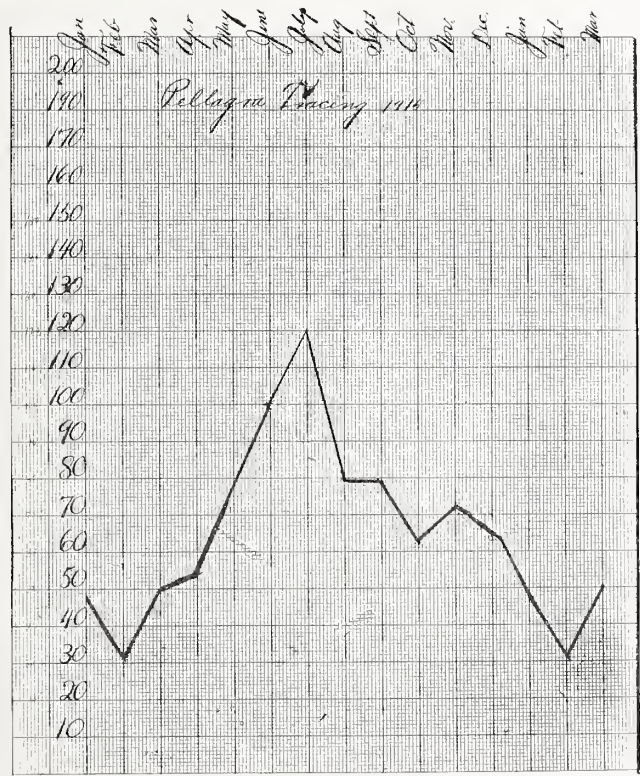


Fig. 4. indicates the seasonal relation of pellagra. Please note that deaths occur in each month in the year. Skin symptoms may not be so prominent during the winter season, however.

We have never isolated the specific cause of smallpox, but we do know of an agent that will, in a majority of instances, prevent smallpox. The specific cause of pellagra has not been isolated, but we do know of an agent which will, in a majority of instances, prevent pellagra. The theory as to how each acts is a secondary matter in so far as end results are concerned, and end results must be the factor which determines the value of any measure whatsoever in the treatment or prevention of any condition.

From this death rate, then, we see poverty as a factor. We see ignorance of fundamental facts

To try to argue ourselves into trying to prevent pellagra by any means, to the exclusion of proper diet, would be like trying to profitably grow bananas in hothouses in Tennessee. The sooner we impress upon the people "*this one thing we know*," the sooner will the medical charlatan cease to reap a reward from their ignorance and the sooner will our business men and statesmen lay hold of the proposition in a definitely helpful manner.

Diarrhoea in Infants: This is one of the four major causes of deaths in the state. It caused 1,112 deaths in 1915, giving a rate of 49.4. From

this death rate we see ignorant mothers feeding innocent babes either filthy diet or an improper diet. Is it to be admitted that the ignorant old "granny" has greater influence than a reputable physician in the family? Or can it truthfully be said that the physician in attendance at birth failed to properly impress the family with some fundamental ideas of infant care? Doctors generally succeed in getting most people operated on who badly need it; and could it be possible that we are more solicitous of the welfare of our operative cases than of the children? If so, we may lay at the door of the practitioners of medicine a just criticism.

Of the acute infectious diseases of infants, diphtheria stands out prominently as the most important cause of death, with 489 deaths to its credit. We, of course, have memories of how fatal this disease once was; at the same time we now know the cause and the means of cure. So the death rate from this disease simply means that measures available have certainly not been properly employed in preventing and curing the disease. But, with charity to ourselves, we will lay the blame on the layman who did not call in time or did not properly advise us of the nature of the trouble when he advised with us about it.

We have, then, in these mortality records a fairly definite view of the situation in Tennessee with respect to the conditions which produce preventable deaths. There are other important causes which should be considered; in fact, more thought should have been given to those considered, but time would not permit.

From this rather panoramic view of the health-destroying conditions in Tennessee with which we are surrounded, we get a view of the magnitude of the work which lies out before the people, and before the profession of medicine in particular.

We have not presented in this paper plans for consideration, because plans by which executive departments may do a great work have been fairly definitely worked out. The things of which we are most in need is means for the execution of plans, and these will be made available only to the degree the public conscience is quickened to an appreciation of existing conditions.

The degree of interest manifested in these problems by each doctor in his daily work, the extent to which each physician feels concerned

about the mortality of his community, will have materially to do in determining the time at which adequate means will be available for the accomplishment of definite ends.

DISCUSSION ON THE PAPER OF DR. SHOULDERS.

DR. JOSEPH H. WHITE, United States Public Health Service: I am glad of the opportunity to discuss this paper. It has been an able presentation of the most useful characteristics of mortality statistics. It has put them in shape so that they will serve as a guide for us in our actions.

I have recently heard two distinctly dissimilar comments on the attitude of the medical profession, and whether either or both of these comments applies to the profession depends largely upon its attitude toward the facts that have been stated in this paper. Of course you all know the adverse comment which is largely promulgated for their own good by the men who constitute the so-called "League for Medical Freedom"—viz., that the medical profession is self-seeking; that the medical profession seeks legislation of a character that shall be of benefit to itself; that we are largely seeking to line our own pockets and care nothing for the good of the public. It is needless for me to say that I believe—in fact, I know, although I am not in practice myself—that this view of the matter is false. Let us, however, look at the other side of the picture, which is more pleasant.

Quite recently a very able and honest lawyer said to me: "Your profession is doing something to-day that no other profession in the world has ever done successfully. You have well under way reforms within your own ranks; you are cleaning your own house, and doing it more successfully than any other class of men on earth ever did. And another thing: You are undertaking altruistic work for the benefit of humanity which directly cuts into your own personal resources." The first is true, as you know, because, in our effort to elevate the standard of medical education, we are preventing unfit men from entrance into the profession. We have, therefore, entirely justified the first statement. The second is true also to an extent—happily not as true as most people think it is, because in seeking to benefit humanity by the broad betterment of public health, while we may at first

cut into our own resources to some extent, we will so better humanity in the end that the people, aided by our efforts, will be better able to pay the physician; and, again, in our efforts to improve the profession, we are limiting to some extent, and already have limited, the number of men who are becoming physicians; and there is a prospect, I am told by men who have studied this matter, that within the next twenty years, if the standard is maintained, there will not be enough qualified medical men to attend all the sick and disabled in the United States, with the present incidence of disease kept up. Therefore if we reduce the incidence of disease by cutting out all preventable disease, we not only will not interfere with our incomes, but put ourselves in the happiest possible position before the people—a position which all the profession wish to take in the eyes of the public.

Because I am a believer in the genuine humanitarianism of the medical profession, I do believe that the medical profession wishes and intends to be fully entitled to take unto itself the compliments paid to them by my friend.

Dr. Shoulders has brought out very strongly in his statement that tuberculosis takes away annually 4,500 people from the State of Tennessee; typhoid, 900 (I am using round figures); pellagra, 140; infantile diarrhoea, 1,200. He has shown us a broad field in which we can work for the betterment of the whole people and the individual, and, if you look at it right, not only for the betterment of the family for whom we are working, but for the betterment of our race; and if you better the whole race, you better in the long run your own progeny. The thing comes home to your children and grandchildren, and it is certainly an inspiring thing to think that the work you and I may do to-day shall live forever; and that is what will happen if we give attention to preventive medicine as it should be given, and if each one of us will pay heed, for instance, to these tubercular patients, and not simply be satisfied to give them drugs, but give to each patient careful thought and see if we can prevent him from infecting somebody else. Let us give such thought as is being broadly given to-day in Australia, where there is a marked reduction in the tubercular incidence simply because this work is being done not only by the authorities, but by the medical profession at large. Give thought to your cases of typhoid, not simply

to cure the disease, but prevent its spread to other members of the same family.

I could go on and talk on this subject *ad infinitum*, but I do not care to take up the time with details. I want to bring out the main point I have in mind, which is this: Let us meet the charge of selfish interest by transferring the onus from our shoulders as medical men in the endeavor to get the means for having this work done, in the endeavor to get laws that are complete for proper hygienic work, to those of the laity, and thereby in a large measure cut out the opportunity for the League of Medical Freedom—which, in my opinion, consists of venders of nostrums—to say we are trying to better ourselves. Whenever you see a patient sick with a preventable disease or one dies of such, say to the father or mother, the son or the daughter: "Your loved one need not have died had the community appreciated as we do as a profession the possibilities of preventive medicine, and, so appreciating them, provided means to prevent the dissemination of that disease."

There is not one of you present, if he will make the effort, who cannot convince every family in his clientele, and convince them so strongly that they will take action, that it is not only our duty, but their duty, to help prevent disease; and if the effort is made by *all these people who have a vote* to bring influence to bear on our legislators and on our Congressmen to see that the medical profession is rightly treated, to see that we who have striven, as this lawyer has said, to institute reformation within our own house, and striven unselfishly for the public good, shall not be put in the same class with the men who are working simply to see how many dollars they can extort from the sick and destitute, then we are going to get results, because our legislators are not going to say that this is a matter of selfish interest on the part of the medical profession, seeing that this move does not come from the doctors, but comes from the great public, for whose voice they always have their ear to the ground. If you will transfer that load to the public, and not carry it any longer yourselves, you are going to get ten times the results in the future that you have got in the past. [Loud applause.]

DR. SCOTT: I am sorry I did not hear the other parts of Dr. Shoulders' paper, but I do not think

it necessary that I should come forward to say what I want to say.

We have a good deal of pellagra in Campbell County, and I want to get some information. I would like to ask Dr. Shoulders if we can rely on the report of Dr. Goldberger concerning his experience. If we can rely on it, it will mean a good deal to us in the management of these cases; but if his reports are colored by prejudice or by a desire to gain popularity, I would be glad to know that. If they are true and we can rely on them, I would be glad to know that.

DR. G. D. LEQUIRE: I do not rise to discuss this paper. There may be mistakes made in sending in our reports.

I have had four or five cases which I would like to mention briefly.

A child three and one-half months of age had an attack of pneumonia, and seemingly made a good recovery. When I dismissed the case, the child seemed to be in perfect health. About ten days later this child was found dead in bed.

There have been recently three or four deaths among children in the community in which I live from similar causes and conditions, except that there was no illness preceding their death.

These children were apparently as strong and healthy as usual upon going to bed, and their parents awoke during the night or next morning to find them dead.

Whether death was due to pneumonia or some congenital defect, I do not know. The conclusion I drew from the first case was that the child died from heart failure following pneumonia.

We have had in our community some few children die of supposed diphtheria. The child would have a slight cold, and some time during the night would wake with croup, and, before a physician could arrive, would choke to death.

DR. L. W. HASKELL, Memphis: I will ask Dr. Shoulders to hold up the chart incidence of typhoid fever. It is one of the most striking points he has brought out in regard to preventable diseases throughout his entire paper. There it is in winter and in the fly season. Next the incidence of deaths and all causes go hand in hand. We have a practical point in that we can do something to benefit the State of Tennessee, and also to do as Dr. White has pointed out—namely, show our unselfishness to the people of the state.

Dr. White, I am sure, will back me up in saying that one of the most important things he did

in New Orleans in preventing and stopping the epidemic of yellow fever was to screen absolutely and teetotally every case of yellow fever.

DR. WHITE: It was the thing.

DR. HASKELL: He screened out the mosquitoes, and it was one of the most important measures in the prevention of typhoid fever. We doctors all know that we should screen every case of typhoid fever, and that we should have disinfected all excreta; but how many of us attend to it?

I am going to make a motion; and if it is out of order, Mr. President, I trust you will call me down. My motion is that this society request the president of the State Board of Health, if he is authorized or has the authority, to have passed a health regulation that all cases of typhoid fever shall be efficiently screened either with wire or with cheap mosquito netting, and that the excreta be sterilized by an efficient disinfectant; that there be a fine imposed upon the physician and a larger one on the family; and that this law be published broadcast.

We physicians owe it to the public, to the state, and to ourselves that such a sanitary regulation should be enforced, and I believe a law can be put through in one way or another. If the president of the State Board of Health has not that authority, he can see to its passage, because I do not think any one will oppose it.

DR. H. E. GOETZ, Knoxville: In speaking of the fly as a carrier of disease, I only want to pay tribute to a member of our profession who is still living, but who is now about ninety years of age, who called attention to the fly as a disease carrier many, many years ago, and published an epitome of his findings of the fly as a carrier of disease. Since then everything has been proved by the microscope and by laboratory findings, and I believe if we could get before the people the information that the fly is a great carrier of disease, it would be a great step in the right direction.

DR. WILLIAM BRITT BURNS, Memphis: A long time ago I brought up the question of mosquitoes in malaria, and very soon after that there came out the work of the Havana Commission on yellow fever; and even before our health board in Memphis would accept the findings of that board, a member of our board of health had been down there and still said he was not convinced.

A word about flies; we will not say any more about mosquitoes, because we understand them very well. I have never heard before a medical society the findings of the Agricultural Department upon the propagation of flies. It is a simple matter which should be better known, but not usually understood, that the house fly does not bite. The house fly does not propagate on anything except horse manure.

Chittenden has tried to propagate flies on cow manure, rotten apples and bananas, and states that while they grow, they die in a few days. They do not live. The larva does not grow to the full-grown size. It is simply a question of using a cheap incinerator on the premises of every household to absolutely destroy the fly. The fly does not bite; he walks and falls into the discharges of typhoid fever patients, carries the material and deposits it upon the food and in milk; so that it is a question simply of destroying horse manure, which, it seems to me, would be easier of accomplishment than one would think on first consideration. Screens, of course, are the best thing. And the question of the automobile. It might be a good thing if our medical societies could persuade Mr. Henry Ford to reduce the price of automobiles to the point where every man could own one and dispense with the horse.

DR. F. A. ZOLLER: With reference to the mortality rate and the possible inaccuracies creeping in, speaking from the standpoint of a country physician, it seems to me that a more nearly correct record of births and deaths can be kept in the country if the duty of filling out the papers devolved upon the physician, and they were forwarded, not to the registrar, as at present, but directly to the state official of the board of health. This might impose a burden on the physicians practicing in the cities, but I can hardly conceive how it would.

I am practicing in a section of the country where the midwife has been doing until recently most of the obstetric work; and while some of these midwives pay attention to the registering of births, others do not. Is it the duty of the physician to supply these negligent and indifferent women with the necessary blanks and enjoin upon them the requirements of the law?

The physician could keep these records if the duty fell upon him specifically instead of upon the appointed registrar. We generally find the

registrar to be a man engaged in a business that requires his entire time—a farmer, maybe. He waits at home until the papers are sent to him, when he forwards them. He does not know and cannot inform himself, as can the physician, whether the district, relative to the registering of births and deaths, has been reported in part or in full. It is my opinion that these records can be more completely and accurately kept if the duty of the registrar fell upon the physician in a more specific manner.

The valuable and highly interesting paper of Dr. Shoulders reveals numerous discrepancies in our registration. These weaknesses taken into consideration and eventually remedied, our present system of recording births and deaths in the state might experience a degree of improvement.

DR. SHOULDERS (closing): With reference to the remarks made by the last speaker, I will say that experience has shown that such a system will not work. In fact, we have a law in Tennessee requiring doctors to report certain diseases, and we get a report of about fifteen per cent of these diseases reported direct to the County Health Officer. That answers the question.

With reference to flies, we think of destroying the fly first. As a matter of fact, the only thing we have to destroy is the influence of the fly in transmitting the material which contains the infection. We can destroy the fly if we want to. We can try to shut it out; but if we will screen in the material that contains the infection, we will do the most good.

With reference to inaccuracy in statistics, I will say that errors in assigning the causes of deaths do not occur in connection with such diseases as I have mentioned in this report. For instance, with regard to nephritis, sudden deaths, and so forth, you will find various inaccuracies. As regards tuberculosis, when a person dies of this disease, it is recognized by the layman. The report regarding preventable deaths portrays in the most accurate manner possible the conditions.

I think the resolution of Dr. Haskell carries with it great potency for good, for the reason that it will impress upon the mind of the layman the most important single factor involved in prevention.

With regard to the question of whether we can place any reliance upon the report made by Dr. Goldberger, I will say the phenomenon ob-

served by him has been verified by a number of men who are reliable. I think he is as reliable as any man who has done such work. I think he is as unprejudiced as any man who has done scientific work. I think he is as immune to the influence which one's attraction for glory might exert as any man I have ever known. So I would rely absolutely on what Dr. Goldberger has said. His deductions may be wrong, but his statements of premises are unquestionably accurate.

A SIMPLIFIED TECHNIC IN THE APPLICATION OF SCHICK'S REACTION FOR TESTING IMMUNITY TO DIPHTHERIA.

BY DR. WILLIAM LITTERER, A.M., Ph.C., M.D.,
Professor of Bacteriology, Vanderbilt Medical College,
Nashville, Tenn.

Schick, in 1913, working in Von Pirquet's Clinic, in Vienna, described a skin test by means of which the presence or absence of antitoxin in the blood of tested individuals could be determined. From data already collected it is evident that this test, either in the present form or some subsequent modification, will become part of the routine of clinical medicine.

The test presents three main uses. The first one is in testing persons for natural presence of antitoxin, particularly when they have been exposed to infection; secondly, to determine the degree of immunity obtained following injections of antitoxins; and, lastly, in aiding in detecting the carrier state.

The test depends on the reaction of nonimmunes to an injection of diphtheria toxin, the amount of which is a one-fiftieth minimum lethal dose for a 250-gram guinea pig. The toxin is a direct irritant to the skin if there is little or no antitoxin circulating in the blood to neutralize the toxin injected.

It has been determined that if an individual should have more than 1-30 of a unit of antitoxin in 1 cc. of blood serum, then that person is immune to the Klebs-Loeffler bacillus. In other words, the test consists of a definite amount of toxin of such a strength that a negative reaction would be obtained if the blood serum contained as much as 1-30 of a unit of antitoxin.

From the result of the studies of Schick, Park, Kolmer, Mashage, and many others, they found that many individuals, without ever having shown symptoms of a diphtheritic infection, already possess antibodies. The age plays a great part regarding susceptibility. In the newborn about 80 per cent contain a sufficient amount of antitoxin in their blood to be immune. The greatest period of susceptibility to the disease is from the end of the first to the end of the fifth year, during which time from 50 to 60 per cent of the children contain a sufficient amount of antitoxin in their blood to be rendered insusceptible to diphtheritic infection. After this period the percentage gradually rises until among adults about 90 per cent will be found to be immune. The reason that so high a per cent of grown people possess an immunity is explained by the fact that they have already had the disease, or had mild, unrecognized attacks, producing immunity, or being subjected for periods of time to the continued action of the Klebs-Loeffler bacillus without having actually developed the disease. This latter explanation is especially borne out in the cases of doctors and nurses in infectious-disease hospitals, in which practically all of them are immune. In some the amount of antitoxin present is exceedingly high; as much as 10 units per cubic centimeter, and even higher than this, have been recorded. Ordinarily a blood containing 1-30 of a unit of antitoxin to the cc. of blood is considered immune. But this does not hold in case the organisms are of exceptionally high virulence, in which case infection might take place with a production of a usually mild infection. This will probably explain the recurrence of diphtheria among persons ordinarily insusceptible to it during certain very severe epidemics.

In children who are taken sick with diphtheria there are no protective bodies in the blood, or not in sufficient quantities, and these are found to give the positive test. Diphtheria carriers, as a rule, give negative reactions. Some of these individuals are found to contain large amounts of antitoxin in the blood.

It is interesting to note that not only do certain individuals vary greatly in their reaction to the Schick test, but that groups of persons forming families vary as groups. Park has called attention to a curious fact in relation to children of the same family. If the youngest child in the

family is negative, it will be found that the reaction will be negative in all of the other children; if any react positive, they are all apt to give the same reaction; while if there is any variations, the older children will be found negative, while the younger children will be found positive.

Park also called attention to the fact that children suffering with scarlet fever are highly susceptible to diphtheria. He found that scarlet fever reduces the resistance to diphtheria as shown by the fact that a much higher per cent would give a positive reaction; and, furthermore, where an antitoxin be given to a scarlet fever case, the total destruction of said antitoxin would take place in 10 per cent of all cases in ten days' time.

The test may be used for determining the length of time for which immunity persists after the injection of a dose of antitoxin. It has been found that the antitoxin begins to disappear from the blood after the lapse of ten days, and that it has practically all disappeared after four weeks' time. Individuals who have had the disease do not necessarily carry antitoxin in their blood even one month after recovery, as shown by the tests made at the Willard Parker Hospital, in which eight cases had had the disease about four months prior to the test; only one gave a negative reaction, while the other seven were positive to the Schick test.

Moffett and Conrad have called attention to another use of the test in that to differentiate between doubtful membranes of the throat. In cases in which there is a membrane and also a positive Schick reaction, it can be assumed that the disease is diphtheria; but if the Schick reaction is negative, the membrane will probably be found to be due to some other organism.

The test has its greatest usefulness in combating severe diphtheria epidemics. The measures most commonly employed in the fight against such epidemics are throat and nose swabs, quarantining or isolation, as the case may be, of those from whose throats cultures of diphtheria bacilli are obtained. It is, therefore, plain that such methods are unsatisfactory. They do not at all meet the exigency of the occasion. Schick's test, however, answers all the requirements in that it points out all those individuals who are susceptible, who do not have sufficient natural immunity, and these may be then given a prophylactic dose of antitoxin. In this case it makes no difference if the individuals exposed cannot be

isolated, and it saves the expense of injecting all, as a good number will have natural immunity enough to protect them.

TECHNIC.

It requires no special technic that is not easily acquired by any physician. The necessary articles are a 1 cc. hypodermic syringe graduated into tenths, a No. 26 or 27 gauge needle, sterile normal salt solution, and the diphtheria toxin. The toxin is diluted in the salt solution according to the strength as determined by laboratory tests. The amount of the solution used will depend on the dilution. The dilution should be so made that approximately 0.2 cc. will be the amount, as it makes a good-sized bleb.

The injection should be made into the skin (intradermal), and not subcutaneously. This is easily accomplished if a small bit of the skin is held tightly between the thumb and forefinger of one hand and the barrel of the syringe in the other is held lower than the needle point. The reaction, if positive, is shown by an area of inflammation varying in extent from 2 to 5 cm. (2-5 to 1 inch) in diameter. It is more intense in the center, and lasts for about ten to fourteen days, when it gradually disappears, leaving a brown desquamating surface. Those giving such a reaction are susceptible of diphtheria, while those who do not, have a natural immunity which is adequate to protect them.

PSEUDOREACTIONS.

Park and others have described a few cases which give what they call a "pseudoreaction," which is characterized by a less sharply circumscribed lesion, which comes on earlier and disappears in from twenty-four to forty-eight hours, leaving a slightly pigmented spot, which does not scale. These reactions have been thought to be due to a local anaphylaxis due to the protein content in the bouillon medium.

The time at which the reaction is to be read is a matter of considerable interest. When time permits, it is better to read the reactions after forty-eight hours than after twenty-four hours, although in the presence of exposure to diphtheria it may be advisable and necessary to inspect the reactions and immunize nonimmune or positively reacting persons at the end of twenty-four hours. In these questionable cases it is always better to give the patient the benefit of the doubt if he has been exposed to diphtheria and im-

munize him at once if the reaction is present. The proportion of individuals giving these pseudoreactions are so small that the giving of antitoxin to these individuals would not seem to present any obstacle to the application of the test.

CONCLUSIONS.

1. It is evident that a simplified technic for the application of Schick's test is needed for the average practitioner.

2. By the employment of the technic as outlined it is believed that it can be acquired by almost any physician.

3. The preservation of the toxin is an all-important feature of the test, since a deteriorated toxin will give fallacious results.

4. Schick's test is of inestimable value in the following conditions:

(a) By this test we now have a means of quelling diphtheria epidemics which is practical, efficient, and available to any physician.

(b) It will obviate the necessity of giving antitoxin to about 50 per cent of persons coming in contact with diphtheritic infection, thereby lessening the great yearly expenditure for unnecessary antitoxin.

(c) It shows a striking similarity in reaction in families and indicates that immunity is a family condition. This saves a great number of persons the injection of serum, with its discomfort, sensitization, and expense.



HENRY BERLIN, M.D.
1851-1916.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Independent Life Bldg., Nashville, Tenn.****JUNE, 1916****EDITORIALS****DR. HENRY BERLIN.**

Dr. Henry Berlin, one of Chattanooga's ablest and most beloved physicians, died at his home on March 31, 1916. He is survived by a son and daughter. Dr. Berlin was born in Taterow, Germany, on May 8, 1851. He received his scientific education in Germany at the College of Rostock. He came to the United States in 1878, being at that time married and of a few years' experience in the practice of medicine. He located in Chattanooga in 1879, immediately after the yellow-fever epidemic, and was associated with Dr. T. C. V. Barkley, who died in 1895. He subsequently attended lectures at the University of Tennessee, Medical Department, at Nashville, and received a diploma on February 22, 1885.

He rapidly took a leading place among the practitioners of Chattanooga, and was an extremely busy man during his entire career. He was a most accurate and painstaking diagnostician and of invaluable aid in consultation. He was a great student at all times, especially along the lines of chemistry and pathology, and experimented a great deal on animals in developing operative procedures.

He belonged to many medical and scientific societies, both in this country and abroad, and possessed a wonderful store of knowledge. He often attended the Tennessee State Medical Association; was one of the founders of the local medical society and its president during 1887; was one of the founders of Erlanger Hospital, its chief of staff for a number of years, and one of its largest supporters, doing therein an immense amount of operative work extending over many years; was one of the founders of the Chattanooga Medical College, and held the chair of abdominal surgery until 1907.

A memorial meeting was held on the evening of April 7 by the Chattanooga Academy of Med-

icine and Hamilton County Medical Society. Many beautiful tributes were paid to his memory by the Chattanooga profession, and the following resolutions were adopted:

"WHEREAS it has pleased Almighty God to take from us one of our best-beloved members and most earnest workers; we realize that his children have lost a fond father, his friends a true friend, the community a valuable man, and this society a loyal member, who will be greatly missed from our councils; we realize that we must bow in humble submission to the will of our Creator; therefore be it

"Resolved by this society, That we extend to the family and friends of Dr. Henry Berlin our heartfelt sympathy; and be it further

"Resolved, That a copy of these resolutions be spread on the minutes and a copy furnished each member of the family.

"[Signed] W. G. Bogart, J. S. B. Woolford, W. T. Hope, G. Manning Ellis, C. A. Cobleigh, E. C. Anderson, German Haymore, W. E. Anderson."

H. P. L.

DON'T HIDE THE TRUTH.

One of the most harmful procedures imaginable is the hiding of the truth concerning an outbreak of communicable disease. It is the surest way to incite vague whisperings and finally to give rise to the grossest exaggerations, which do far more harm than the truth could possibly do—if, indeed, the truth could do any harm. Shame to say, there are still to be found here and there physicians who will agree to hide cases of communicable disease in individual families, and to hide as well as they can outbreaks of disease in communities. About the only thing accomplished by this practice is to spread disease.

The old lie, "it hurts business," is one of the most pernicious of all lies when used as an excuse for hiding the truth relative to communicable disease. Let the people know, and let them know promptly, when the community in which they live is invaded by disease which may, by any chance, become epidemic. Instruct them how they may avoid contagion, and keep them fully advised as to the true status of any outbreak of disease. The best advertisement for any community is for it to let the world know that health is going to be protected in that community. This cannot be done unless the people know the truth.

ENCOURAGING—DISCOURAGING.

It is most gratifying that our membership roll now contains more names than at any previous time in the history of the association. It is really remarkable, in view of past experience, that such full reports have been made thus early in the year. The earnest work of our county secretaries is reflected in the fact that our membership is so large. We are encouraged to believe that the mark—two thousand members—set by the JOURNAL may be reached within a reasonable time. The increased membership may mean that the value, the necessity, of organization is becoming apparent to the rank and file of Tennessee physicians, and we believe that this is what it does mean. The recent meeting at Knoxville was certainly indicative of an increased interest upon the part of our members in the general affairs of the association. The correspondence coming into the office of the secretary seems to show that physicians over the state feel that the association is theirs, and not the property of two or three men who have been put into office by them. For instance, we frequently receive letters now referring to "our JOURNAL," whereas it formerly was "your JOURNAL." All this, and a deal more, is encouraging.

The increase in membership is due to *new* members, and has been brought about in spite of the fact that a comparatively large number of *old* members have neglected to renew their membership for the current year. There is no excuse for these; they have just neglected—that's all. If they were not so careless and indifferent, we would now be much further along toward the two-thousand mark. There are a few county secretaries who have neglected to report names and remit dues for some old members who have paid 1916 dues into their hands. This is not only inexcusable; it is downright wrong. While the Knoxville meeting was fine, it was so in spite of the absence of many men who should have been on hand. We still receive a few letters which make the impression that the writers are interested in their membership in the State Association only because they are thereby given an opportunity to "roast" everybody and everything in sight. These fellows have never been known to do one single thing for the promotion of the cause of organized medicine nor for the upbuilding of medical ideals. They are in a sad minority, however, and we refer to them simply

to record the fact that they exist. There are some who hold membership in the State Association only because they are thereby enabled to secure membership in other organizations outside the state. They do not attend the meetings of their county societies and never contribute anything to their success. There are some other things on this side the record, too.

The signs are hopeful. The good side of the record overbalances the bad side. We are on rising ground, and the medical profession of Tennessee is growing better and better as the years pass. This year 1916 is *the* year for us. It offers opportunities for real progress which have never been presented before. Let us not fail to seize upon them.

AIMING AT THE WHOLE TREE.

A member of one of our county societies was recently given a subject for a paper to be read before his society. It was a big, a very big, subject, and he realized the fact. Prefacing his written remarks, the essayist told this story: An old gentleman afflicted with a palsy went with his son, a young man with steady hands, to hunt squirrels. He told the boy that his shaking hands sadly affected his marksmanship, but contributed greatly to his efficiency as a "bush shaker." So he instructed the boy to get on one side of the tree and do the shooting, while he took his position on the other side and shook the bushes. The old man shook and the boy shot, but no squirrels were bagged. Finally the old gentleman directed the boy to give him the gun and to take his place as shaker. This exchange of positions and duties having been effected, the old man held up the gun with his agitated hands, with the muzzle pointing in the general direction of the tree, and began to bang away, while the boy shook the bushes to scare the squirrels to the "gun side" of the tree. After a while, down came a squirrel—a little young squirrel—and the old gentleman began to boast of his superiority over his son as a marksman. The boy simply said: "O, hell! I could hit one, too, if I could aim at the whole damn tree."

Too frequently we are called upon to read or to listen to papers aimed at "the whole tree." Sometimes in the course of their reading a little young squirrel is brought to the ground, but generally nothing falls but leaves.

PELLAGRA IN NASHVILLE.

The Journal of the A. M. A., in the issue of May 27, makes editorial comment on the work of Jobling and Petersen in making a survey of Nashville to determine the facts relative to the prevalence of pellagra and to gather data bearing on the manifestations of the disease and its relation to the habits and occupations of its victims and their social and economic conditions. More than five hundred cases of pellagra which have occurred in Nashville since 1911 served as the basis of the report by Jobling and Petersen, these cases having been recorded by them as a result of their most painstaking survey. Some very interesting observations are made, and facts which seem to be very significant are brought out, and these are published in an article, "The Epidemiology of Pellagra in Nashville, Tenn.," in the Journal of Infectious Diseases, 1916, XVIII., 501.

Drs. Jobling and Petersen are prosecuting their studies of pellagra in Nashville, being now engaged in making an even more intensive survey than that of 1915. The facts developed will be carefully weighed, all possible scientific investigation will be entered into, and it may be that this work will result in a very material addition to our present knowledge of pellagra—its causation, treatment, and prevention. If any of our readers are in position to render helpful assistance to these gentlemen, our own scientific investigators, we hope they will forward any information of importance of which they may be possessed to Drs. Jobling and Petersen at Vanderbilt School of Medicine, Nashville.

SECTIONAL SOCIETY MEETINGS.

There are four medical societies in Tennessee which are independent of other organizations and which serve separate sections of the State from which their names are taken. All of them have been in existence for a long number of years, and the facts that their meetings are well attended and their programs well filled bear witness that they fill a want of the doctors in their respective territories. During the month of May the West Tennessee Medical Association met at Jackson; the Middle Tennessee Medical Society, at Lewisburg; and the Upper Cumberland Medical Society, at Monterey. There were splendid crowds of doctors at all of these meetings. The East Tennessee Medical Society had no regular meeting this spring, but most of its

members were on hand at the Knoxville meeting of the State Association.

These sectional societies offer their members opportunity for talking things over among themselves, and seem to foster a neighborly, "home-folks" spirit among them. The charge has been made that the continuance of these organizations is, or will become, detrimental to the welfare of the State society. In looking over their membership records, however, one will find that nearly every man enrolled is also on the roll of the Tennessee State Medical Association. An examination of their programs will show that those men who are active in them are the same men who keep their shoulders to the wheel in county societies and in the State society. What's the answer?

AN EXPLANATION.

In an effort to secure the enrollment of all 1915 members whose names were not reported for 1916, the Secretary sent out letters to them asking that they immediately take steps to renew their affiliation. Several of these letters were sent to gentlemen whose membership in 1915 was in a different county than that from which their names were reported for 1916. In all such instances, however, we have found these names properly entered on the 1916 roll. The letters went to them simply because their names were taken from the rolls of the counties in which they held membership in 1915.

THE JOURNAL'S PRINTERS.

For several years the JOURNAL has been printed by the Rich Printing Company, whose contract expired with the issuance of the May number. The editor feels that he should here express his gratitude to the officers and employees of the establishment in which the JOURNAL has been made for their courteous and patient forbearance and for the interest they have taken in getting the JOURNAL out on time and in good shape.

This number is from the press of the McQuiddy Printing Company, with whom a contract has been made for the current year. We feel that the JOURNAL is fortunate in this new connection, since the McQuiddy Company has one of the best-equipped plants in Nashville—a city of printing establishments. We believe that our readers will be pleased with the service secured

from our new printers, and that our contributors will find it possible to secure reprints at reasonable figures and in good form.

NOTES AND COMMENT

Are you a doctor? Fight cardui!

The lives of "big" men oft remind us that things are not always what they seem.

Physicians in Tennessee should be careful to remember that their registration under the Harrison law must be renewed before July 1.

If you want reprints of your article, give your order to the McQuiddy Printing Company, Nashville, as soon as you can. They will cost much more if you delay.

Dr. W. M. Johnson, of White County, will soon complete a year's service in the New York Skin and Cancer Hospital, and will come back to Tennessee to reënter practice.

You will not get much out of anything into which you do not put something. Wake up and contribute some good work toward making your county society what it ought to be.

The State of Victoria, Australia, is reported to have stamped out tuberculosis within its boundaries by enforcing measures well recognized as essential to the control of this disease.

Our 1916 enrollment is barely short of 1,500 names. This is more than fifty ahead of any previous year's enrollment. Now let everybody pull, push, and shove for another hundred. We ought to have them in.

Get yourself off into a corner and practice writing original prescriptions. When you have become perfect enough to write a few good ones—and you will need just a few—use them instead of the "alreadies."

Teach your patients that the infected person and the discharges from his body are far more dangerous than contaminated bedclothes and rugs

and rooms. The bugs are all gone from the clothing and room long before they are gone from the body of the man.

Teach them that they eat and drink typhoid fever and that they do not "catch" it. And tell them what they eat and drink with typhoid germs and what they should do to protect themselves against such diet.

The May JOURNAL was greatly delayed because of the serious illness of Mr. Harry Kline, foreman of the Rich Printing Company. Mr. Kline has "made up" the JOURNAL for several years; and when he became disabled, everything got "out of gear."

The great trouble that Funston and Pershing are having in Mexico is to protect their "lines of communication." It's the same way in our Army of Medicine sometimes. We scatter our forces over too long a line, get "busted" in the middle, and lose out at both ends.

Dr. Cabot has broken out again. He's a great man and a great doctor, but seems to want to measure every other doctor by the yardstick of his own advantages and opportunities. Why, we wonder, doesn't he stay in his own ring and fight whatever there is in the ring that ought not to be there?

Mrs. J. G. Eblen, wife of Dr. J. G. Eblen, died at her home in Lenoir City lately. The JOURNAL is in receipt of a copy of the resolutions adopted by the Loudon County Medical Society. In behalf of Dr. Eblen's many friends in the association the JOURNAL would offer an expression of heartfelt sympathy to him.

This might have been said to the doctors of the land: "You are the guardians of our most important single commodity, and, if you wish, can nobly serve your generation by a realization of the value of your trusteeship. The dividends produced will not only be of a material nature, but, far better, will also include the sense of valiant service to your State and nation." The preservation of the *public health* is largely in the hands of the doctors of the land.

SOCIETY PROCEEDINGS

RUTHERFORD COUNTY.

The Rutherford County Medical Society met in regular monthly session at the clubrooms of the Masonic Building on Wednesday, May 3. The subject for discussion was "Arterio-Sclerosis," and the various phases of this most important and interesting subject were gone into very thoroughly by the members present.

The social features of our society meetings are calculated to engender and promote a spirit of unanimity and common interest, and the exchange of ideas concerning the scientific subjects discussed always prove helpful.

Members present at the May meeting were: Dr. J. A. Scott, President; Drs. R. W. Read, A. E. Goodloe, E. M. Holmes, M. B. Murfree, G. W. Crosthwait, J. C. Kelton, V. S. Campbell, A. N. Gordon, J. T. Harris, V. K. Earthman, A. J. Jamison, J. C. Overall, B. N. White, and E. H. Jones.

The next meeting will be held on the first Wednesday of June. E. H. JONES, M.D.,
Secretary.

SULLIVAN, CARTER, AND JOHNSON COUNTIES.

The Sullivan, Carter, and Johnson County Medical Society convened in regular monthly session at Elizabethton at 10 A.M. on May 3. The place for the meeting, as well as the day, was ideal, and a goodly number of the physicians of the three counties represented were in attendance.

Dr. G. P. Bingham, of Elizabethton, was elected to full membership, while Dr. L. F. Cosby, of Abingdon, Va., was elected to associate membership. Five new applications for membership were received.

Dr. C. W. Fleenor, Holston Valley, Tenn., was essayist and read a most interesting and instructive paper on "Entero-Colitis." A timely subject and one of special interest to the general practitioner, it naturally elicited a full and free discussion.

After the meeting, an excellent dinner, by the courtesy of the local profession, was *destroyed* at the Lynnwood Hotel.

While one of the youngest societies in the State, the Sullivan, Carter, and Johnson County

Medical Society is fast attaining adult size. We now have on the membership roll, exclusive of the five new applicants at its last meeting, fifty-four members. Seven, however, are affiliated members, being residents of Virginia. In my judgment, Johnson County deserves the title of the "banner county" of the State, for the reason that she never had any medical organization, so far as I can learn, until two years ago; and, with one or two exceptions, every eligible physician in this county is now an enthusiastic member of his county and State society. Let us hope that her good influence will extend to every county in the State, and especially to her two sisters in this tri-county society.

W. K. VANCE,
Secretary.

HENDERSON COUNTY.

The Henderson County Medical Society held its regular monthly meeting on Tuesday, April 11, in Lexington, with the President, Dr. R. H. Milam, in the chair.

The minutes of the previous meeting were read and approved without objection.

Dr. W. T. Watson read a very interesting paper on "Race Suicide." The discussion was opened by Dr. C. E. Bolen, of Wildersville, followed by a number of other members.

Dr. G. A. Brandon reported an interesting case of cystic tumor.

Dr. C. H. Johnston made a motion, seconded by Dr. Bolen, that we have our annual outing on the first day of June this year. Drs. Parker, Brandon, and Watson were appointed a Committee of Arrangements.

There being no further business, the society adjourned.

Doctors present were: Milam, Boyd, Bolen, England, Johnston, Arnold, Watson, Davidson, Brandon, and Parker. SAMUEL T. PARKER,
Secretary.

MEMPHIS SOCIETY OF OPHTHALMOLOGY AND OTO-LARYNGOLOGY.

The society met on April 11, with Dr. Howard in the chair.

RANULA.

Dr. R. W. HOOKER presented M. K., age three months, whom he had had under observation for three weeks. The child had a papillomatous growth, mucoid consistency, on the left side of

the median raphe, underneath the tongue, proceeding evidently from the sublingual glands. The growth was about the size of a hazelnut, more pointed than pedunculated. He, having never seen a case like this, desired the opinion of the society as to its nature and methods of procedure in its removal—whether or not it should be entirely removed or simply incised, also whether or not a general anæsthetic should be used.

DR. SHEA said he saw the case four weeks ago in the clinic, and at that time told the parents the nature and the outcome of the growth, suggesting that the ranula be dissected out under ether. It has not changed in size during the past four weeks. Dr. Farrington and Dr. Shea have had three such cases during the past year, two of which were removed under general anæsthesia and the third removed by a general surgeon. There has not been a return of any of the three cases.

DR. HOWARD thinks this a case of ranula, and advises to leave them alone, unless they cause a great deal of obstruction.

DR. FARRINGTON, in his cases, dissected the sac out. He was not able to remove the same in one piece; however, got as much of the sac out as possible. These cases are best operated on under general anæsthesia. In Dr. Hooker's case, might first try making a simple incision, and then, if sac fills up again, remove.

DR. ELLETT thought this an occlusion at the end of the duct, and asked why probing would not help same; and, if not, advised the puncturing of the tumor, as he thinks it is a dilatation of the duct and not a simple tumor.

DR. LEVY has had several cases in his clinical work, but they were all in grown people. These were simply slit open; and, as far as he knows, there has been no recurrence.

INFECTION FOLLOWING CATARACT EXTRACTION.

DR. ELLETT presented the patient with infection following cataract extraction, whose case he reported at the previous meeting. The inflammation had subsided more, but the eye was still quite red. Good projection was present and the tension normal.

DR. SAVAGE said that this is the only case he has seen that anything like an eye was left, and congratulated Dr. Ellett upon saving the eye.

CASE OF INTRAOCULAR TUBERCULOSIS.

DR. LEWIS reported the following case: Mrs. E., age forty-seven, first seen by me on October 26, 1915. History: Vision got bad suddenly about ten days ago. Prior to that time could see well, both far and near. General health poor for long time. Has little appetite. Vision: O. D., counts fingers at 10 feet; O. S., moving objects, 2 feet. Eyes perfectly normal in appearance externally. Ophthalmoscope shows all media clear, optic nerves and retinae slightly pale. Urinalysis negative, also nasal accessory sinuses. Free purgation and increasing doses of KI prescribed.

November 8.—Vision: Right, 20-70; left, 20-100. Iritis beginning in O. S. 1 per cent atropine t. i. d. prescribed.

November 10.—Iritis increasing in O. S. 5 per cent dionin added to eye treatment and general tonic of iron, quinine, and strychnine given. Iritis subsided in a few days, but returned when atropine was stopped. This occurred several times, pain and inflammation promptly returning with the withdrawal of cycloplegic.

February 15.—Vision: O. D., 20-70; O. S., 20-200. Diagnostic dose of 0.5 milligram old tuberculine given. Severe focal reaction obtained, with pain, marked congestion, and increased dimness of vision.

February 21.—1-5000 milligram O. T. given and continued semiweekly in gradually increasing doses. To-day she received 1-100 mg. Vision is now 20-40 O. D., 20-80 O. S. Her general health has improved wonderfully, and she looks 100 per cent better.

The vitreous of the left eye is quite cloudy, but the fundus can be seen fairly well. This case seems to have started as a tubercular optic neuritis.

DR. SIMPSON says that Tennessee should be a good field for finding these cases, as we have more T. B. here than in the majority of the States. However, it does not seem that the cases suspected react to T. B. test, like McCool, Jackson, and others report. This case shows up nicely, both as to reaction and treatment, and points definitely to T. B. The case now shows a neuritis, as vessels are very small; and, if so vision would tend to decrease instead of increase in the future. Vision at present rather good considering the condition of eye.

DR. BLUE reports that this patient has improved a great deal in general health as well. While in New York, at Knapp's Clinic, saw several cases of different eye conditions which gave positive reaction to T. B. test. Knapp, too, reports an improvement in the general health of cases, even though T. B. of the eye is the only point of focus found.

DR. ELLETT had concluded, after reading some of the recent articles on ocular tuberculosis, especially those of McCool and Jackson, that he was overlooking this as a cause in some of his cases. He had, therefore, recently tested a considerable number of patients, especially cases of uveitis, with tuberculin, without obtaining but one positive result. The case presented would serve to keep up his interest. The test he follows is with O. T. by injection, giving two doses of 10 m. of serial dilution No. 3, then two of 25 m. of the same dilution at intervals of three or four days, provided no reaction is obtained.

HEATH OPERATION FOR CHRONIC SUPPURATIVE OTITIS MEDIA.

DR. W. L. SIMPSON presented Miss A. S., with history of suppuration in left middle ear for short time, eleven years ago. After beach bathing eighteen months ago, left ear began to discharge, and had almost continuous discharge, even with treatment, up to the time of the operation—August 7, 1915. The hearing for ordinary voice was 18 feet, and whisper 10 feet, before the operation. Rinne was regular and Schwabach long C plus and C plus. The labyrinth was normal. There was quite a good-sized perforation in drum posteriorly.

The Heath operation was made on August 7, 1915. The antrum and mastoid cells were all full of pus and granulation. A skin graft was made on the eleventh day. The wound healed in about eight weeks. The hearing to-day is: Whisper, 40 feet.

This case again demonstrates that the Heath or a similar operation has a place in mastoid surgery. Cases with small perforations, which refuse to heal and which have good hearing, can often be entirely healed without a radical operation, and it seems that a Heath operation gives better continuous drainage than the ordinary simple mastoid operation.

DR. FARRINGTON said that this is one of the cases which show conclusively that we overlook

the opportunity to heal these chronic cases by the Heath method. To allow these chronic conditions to go on carries with it the danger of serious results; and even if this does not occur, the patient continues to have a discharge, and usually a very disagreeable odor. Heath operation is a more complicated one, but is much better than a complete simple mastoid operation in these cases.

TOXIC AMBLYOPIA.

DR. LEVY reported the following case: Mr. C. C. S., age forty-eight years, was referred to me for an examination of his eyes. He gave the following history: About eight months ago first noticed that vision in right eye was failing; left eye seemed O. K. The vision, however, seemed to be worse when trying to do close work; for, being a railroad man, he had to get out monthly reports. Did not pay much attention to same until about two months ago, when he noticed that he could not see clearly in front of him with O. D., although when looking to the sides everything was clear. His vision seemed clearer at night also. His left eye seemed O. K. His family history was negative, as was also Wassermann and urine; but, as to his habits, he said he smoked from fifteen to twenty cigars a day, and also drank about a quart of whisky per day; this he has done for years.

Upon examination, I found O. D. V. 20-200 unimproved with glasses; reading J.20 with difficulty; O. S. V. 20-40+ with +75 + 25 ax. 180 V. 20-20; reading J.14 with +1.50 J. I. with ease.

Fundii showed absolutely nothing; but upon taking fields of right eye, found fields for red and green contracted, as well as a central scotoma for each. The fields of left eye were normal, so did not bring drawing of same, but have one of right eye to show. I shall report at some future meeting the results the treatment produced in this case.

DR. ELLETT thought the presence of tobacco-alcohol amblyopia in one eye only was quite rare; in fact, Fuchs says that the reduction of vision is almost always equal in the two eyes. Before accepting this diagnosis, therefore, he thought that all local disease, especially disease of the nasal sinuses, should be carefully excluded.

DR. LEVY, in answer to Dr. Ellett's question regarding sinuses, said that an examination of nose and sinuses showed nothing. Weeks, in his

book on diseases of the eye, reports a case on record in which scotoma developed in one eye many months before the fellow eye showed any sign of involvement.

CHANGES IN REFRACTION ASSOCIATED WITH DIABETES.

DR. ELLETT reported a case of changes in refraction associated with diabetes. The patient was a lady, aged about fifty-five. Her refraction had undergone the following changes in a few months: October 12, 1915: O. D. 20-20—50 ax. 90=20-20+ O. S. 20-25 unimproved. Add +2.50=J. I. January 21, 1916: The addition of +3.00 was required to give J.II. March 31, 1916: O. D. 20-60 +50=+1.00 ax. 15=20-25+ O. S. 20-60+ +1.00=20-30. Add +3.00=J.III. The urine contained 4 per cent of sugar.

The occurrence of this condition in diabetes is not uncommon. As regards other conditions, a case of quinine amblyopia in a child of seventeen months was mentioned, which was under observation during the whole progress of the trouble, and in whom the refraction, as measured with the ophthalmoscope, changed from Em. to — 8 and then back to Em. in about two months. This was thought to be due to the presence of quinine in the media of the eye, increasing the index of refraction.

SCINTILLATING SCOTOMA.

DR. SAVAGE reports the following case of Mrs. C. L. F., age thirty-three: Complains of occasional attacks of complete blindness of first one and then the other eye, and once or twice of both eyes at the same time. This condition has been going on for the past several years. The family history is good, and her own personal history is negative. There is no redness nor any external signs of any trouble when the blindness comes on. About one week before consulting me she was out riding in an automobile at night, and felt an attack coming on in one eye; and immediately she covered the other eye to determine whether or not she could see an arc light at a street crossing, and says that she could not see one ray of light from it for about three or four minutes, when the vision as suddenly was restored.

The blind spells lasted, as a rule, only from two to five minutes. No discomfort felt at these times. Vision of O. D. = 20-13; O. S. = 20-13. Neither one improved by any lens. The same

was true with the use of a mydriatic. The ophthalmoscope showed the fundii perfectly normal.

DR. SAVAGE reported a case which showed the gain in vision by the forcible use of the squinting eye.

April 27, 1915: Mrs. R. Y., age thirty-seven. Has had external strabismus of left eye since birth. History, negative, so far as the cause of squint. Vision of A. D. = 20-20, not improved by lenses; vision of O. S. 20-200, not improved by lenses.

The same results on findings were obtained by the use of a mydriatic. By means of the ophthalmoscope the fundus of each eye was found to be normal. There being no pathological condition to account for poor vision of O. S., I concluded it was due to nonuse; and as the patient would not consent to operation for relief of squint, I advised her to cover up O. D. for 1-2 hour each day and use the left one. This was carried out practically, with the result that her vision has come from 20-200 to 20-65 on the date of her last visit to me—April 11, 1916. The right eye is the same as on April 27, 1915.

DR. STANFORD said, with regard to the first case, that Jackson claims this is brought about by spasm of the central artery of the retina.

DR. STANFORD was surprised at the improvement in the amblyopic eye; for, as a rule, this does not occur.

LOUIS LEVY,
Secretary.

WEST TENNESSEE MEDICAL AND SURGICAL ASSOCIATION.

With an attendance of more than one hundred, with a splendid program, and with most delightful entertainment of the members, the West Tennessee Medical Association's meeting at Jackson on May 18 and 19 was a brilliant success.

Dr. Marvin Blanton, Union City, presided over the deliberations of the body, and Dr. I. A. McSwain, Secretary from the time when the mind of man can remember no other, rendered his usual efficient service.

The entertainment feature of the meeting was a banquet, at which all present had an old-fashioned good time.

Officers for 1917 were chosen as follows: President, Dr. J. C. Paris, Rutherford; Vice Presidents, Dr. T. E. Sawyers, Martin, and Dr.

Robert Mann, Memphis; Secretary, Dr. J. A. McSwain, Paris.

The next meeting will be at Martin in May, 1917.

MIDDLE TENNESSEE MEDICAL SOCIETY.

The semiannual meeting of the Middle Tennessee Medical Society was held at Lewisburg on May 18, 19.

Dr. R. W. Billington was in the chair, and Dr. Jack Witherspoon discharged the duties of Secretary.

As is always the case at Lewisburg, a fine crowd was on hand, and the papers presented were well received and thoroughly discussed.

The usual public meeting was held on the evening of the first day, at which the presidential address of Dr. Billington on "Progress in the Treatment of the Crippled and Deformed" was read.

Other features of this program were addresses by Dr. H. H. Shoulders, of the State Board of Health, and Prof. R. H. White, of the Middle Tennessee Normal School, at Murfreesboro.

The next meeting of the society will be held at Franklin in November under the presidency of Dr. W. Scott Farmer.

Dr. Jack Witherspoon was reelected Secretary, and Dr. Olin West was made Vice President.

ROANE COUNTY.

The Roane County Medical Society met in regular session in Library Hall, Harriman, on May 15, at 2 P.M., Dr. W. S. Clack presiding.

Those present were: Drs. Sewell, J. M. Clack, W. S. Clack, T. H. Phillips, Rockwood; Drs. Roberts and Zirkle, Kingston; Drs. Givan, Dodson, Carr, and Hill, Harriman.

Several interesting clinics were reported.

Papers were read by Drs. Roberts and Walter Clack, which brought out a lively discussion. The former was on the subject, "Hemorrhoids as a Complication of Labor;" the latter, on "Cow's Milk in Infant Feeding."

Dr. J. Blair Cross, of Wheat, was unanimously elected to membership.

It was decided to give a banquet some time in the near future, at which we will endeavor to have every regular physician in Roane County as our guest. Drs. Givan, Roberts, and Phillips were appointed a committee to arrange for the

same. We hope in this way to get the doctors better acquainted with one another and increase the membership of our county society.

W. W. HILL, *Secretary*.

BOOK REVIEWS

DISEASES OF THE SKIN. By Henry H. Hazen, A.B., M.D.; Professor of Dermatology, Medical Department, Georgetown University; Professor of Dermatology, Medical Department, Howard University. C. V. Mosby Company, St. Louis.

In this volume the author has certainly accomplished his purpose—viz., brought together just what the student needs, and no more. He has done it in such a way as to place this most difficult branch within the grasp of the average medical student's mind—something which has heretofore been a task for all who have attempted it.

The nomenclature of skin diseases, together with the fact that to the average observer so many of them show gross points of similarity, has always made it most difficult for the student to grasp any hold on this branch. Using the ordinary nomenclature accepted by all present-day writers, Dr. Hazen has set about to clarify this subject by adopting a system of study noted for simplicity and conciseness.

He first adopts a scheme or key for routine examination and study of the patient, which, if followed by the student, will enable him to soon get an insight into the real finer points of symptomatology and diagnosis. This once done, the worst of the problem is over.

He could not possibly give more pathology in so few well-chosen words. This, after all, must go along with your symptomatology to get the *real* grasp of the picture of any disease. The way it is given is so descriptive and to the point as to not burden even the beginner, and yet the busy dermatologist might here find something of value and enlightenment even for himself.

He has wisely chosen to discard those exceedingly rare dermatoses, and yet has found time to briefly and clearly, in his own way, define the rarer ones which the American physician might perchance encounter in a lifetime.

As to his illustrated photographs, nearly all are par excellence. Some of them are the very best to be found. They all seem to have been taken with the light and shadows to the very best advantage.

I have seen no book to equal this for the student.

HOWARD KING.

THE MEDICAL CLINICS OF CHICAGO. Vol. I., No. 5. March, 1916. W. B. Saunders Company, Philadelphia.

The feature of this number of the Chicago Clinics is the clinic of Dr. J. T. Case on "Roentgenologic Aspects of Intestinal Stasis." The illustrations are good, and this is a very instructive contribution.

A great variety of subjects are taken up in the clinics of the usual contributors to the Chicago Clinics, and this number is one of the best that has yet appeared.

THE ART OF ANÆSTHESIA. By Paluel J. Flagg, M.D. New York City. 333 pages. Price, \$3.50. J. B. Lippincott Company.

The introduction to this work is a brief history of anæsthesia and of anæsthetics and their discoverers. The work proper is divided into two parts.

Part I. deals with the classification of anæsthesia—its characteristic signs and its administration by different methods and agents.

Part II. deals with the preliminary preparation of the patient for anæsthesia, the duties of the doctor and nurse following anæsthesia, and closes with an admirable chapter on the patient's viewpoint of an anæsthetic.

The chapter on general anæsthesia deals comprehensively with the evidences, causes, and management of the stages of induction, maintenance, and recovery. The consideration of the muscular, respiratory, color, eye, and pulse signs is clear and practical. The technic of the administration of general anæsthesia by ether, ethyl chloride, chloroform, and nitrous oxide is given in detail, with apparatus fully described and illustrated. The indications for and the technics of administration of local and spinal anæsthesia are fully covered.

The work is an admirable guide to those wishing to specialize in anæsthesia.

E. M. F.

CANDY MEDICATION. By Bernard Fantus, M.D., Professor of Pharmacology and Therapeutics, University of Illinois. St. Louis. C. V. Mosby Company. 1915. \$1.00.

There is no other book on this subject, and its author has made a real contribution for the benefit of the medical practitioner. His prime purpose seems to be that he shall be able to help destroy the terrors of childhood for "nasty medicine;" but, as all doctors know, men and women are simply children grown up when it comes to taking medicine, and Dr. Fantus' work will be instrumental in making the treatment of disease more easy in all classes of patients.

THE MORTALITY FROM CANCER THROUGHOUT THE WORLD. By Frederick L. Hoffman, LL.D., Statistician, the Prudential Life Insurance Company of America; Chairman, Committee on Statistics, American Society for the Control of Cancer; etc., etc.

The Prudential Life Insurance Company has done a great work in the effort it has put forth to reduce the loss of life from curable and preventable diseases. Dr. Hoffman, serving his company, has served humanity as few other men have done outside the laboratories and hospitals. This book from his pen is a work that will establish him as one in whose debt all who want the ravages of cancer checked will acknowledge themselves to be. Dr. Hoffman has done a great deal more than simply to present the best and most comprehensive statistics yet published on cancer, though to have done this was a monumental work. He has shown as none other has done the great need for the betterment of our vital statistics, and has demonstrated their tremendous value when properly recorded and studied and interpreted.

DIAGNOSTIC METHODS. A Guide for History Taking, Making of Routine Physical Examinations, and the Usual Laboratory Tests Necessary for Students in Clinical Pathology, Hospital Internes, and Practicing Physicians. By H. T. Brooks, M.D., Professor of Pathology, University of Tennessee. Third Edition. C. V. Mosby Company, St. Louis. 1915. \$1.

This is a very valuable little work for the experienced laboratory worker, for whom it will serve as a quick index to clinical and laboratory methods. It is valuable for the student and for the practitioner, who must apply laboratory tests which they can find properly outlined for them in concise form. Dr. Brooks has evidently made great effort to put into his work only such statements as can be relied upon, and has been highly commended by eminent laboratory workers for the accuracy of the subject-matter of his book.

THE CLINICS OF JOHN B. MURPHY. Vol. V., No. 1. February, 1916. W. B. Saunders Company, Philadelphia.

Twenty-four subjects are treated of in this number of Murphy's Clinics, and thirteen of the clinics deal with tuberculosis of the hip. The chief value of this number will be found to lie in the fact that the differential diagnoses of certain conditions are thoroughly set out.

Vol. V., No. II. April, 1916. A "talk" on surgery of tendons and tendon sheaths is one of the valuable features of this number. Joint, bone, muscle, and nerve surgery are demonstrated in other divisions of the April Clinics.

DOCTOR:

This is your Journal. If you do not give it proper support by patronizing those whose ads. appear in its columns, it is your fault if the Journal does not carry the amount of advertising that it should be carrying. Kindly remember this fact.

THE SECRETARY

THE JOURNAL

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NUMBER 3

THE PRINCIPLES OF TREATMENT IN NEPHRITIS.*

By MARTIN H. FISCHER, M.D.,

Eichberg Professor of Physiology in the University of Cincinnati,

Cincinnati, O.

I. INTRODUCTION.

When we discuss so important and practical a question as the treatment of nephritis, we can hope to make progress only as we come to be of one mind regarding the principles which should guide us, because for the treatment of nephritis, if you are familiar with its history, everything has been suggested. There were times when we used hot irons upon the back, and, in more recent days, prayer has been proposed to overcome the serious signs and symptoms that frequently arise in the course of this critical entity. If we are going to choose between such extremes or find a middle course, it behooves us, first of all, to ask ourselves what is really the nature of the changes that occur in the kidney and elsewhere in the body; and only as we arrive at a logical conclusion regarding the nature of these changes can we hope to make any advance and to agree upon the question of treatment.

Our discussion will, I think, demonstrate that the problem of nephritis is in good part only a subheading of a larger problem in medicine—namely, that of œdema; and this problem of œdema, so much discussed in medical circles, is in its turn but a subheading of a still greater

problem with which the medical man has concerned himself but little. This is the physiological question so much argued by plant and animal physiologists, which asks why a cell or a group of cells in a plant or animal holds any water at all, and why the amount thus held under normal circumstances (as is the case for months and even years in our bodies) is so constant an amount.

II. CRITICISM OF THE OSMOTIC THEORY OF WATER ABSORPTION.

I shall not burden you with a recitation of the many hypotheses which have been proposed to explain this fundamental problem. They are, all of them, so inadequate that their inadequacies are admitted even by the proponents of these hypotheses. Let me merely illustrate the matter by touching upon the most important and most heralded of them—namely, the osmotic theory. According to this, our cells are surrounded by a so-called "semipermeable membrane," which by definition is one that is permeable to a solvent (water, in the case of the human body), but impermeable to all dissolved substances.

Suppose we grant this assumption in the case of any cell or any group of cells composing an organ or the whole body. Then, depending upon the changes in the concentration of dissolved materials within and without a cell, an organ, or for the whole body, water will move into or out of these, depending upon the amount of the differences in concentration, and always form a region of low concentration toward that of the higher concentration of the dissolved substances. Such differences in concentration, therefore, serve to make possible a movement of water into and out of cells. But this is true only as long as the cells are surrounded by semipermeable mem-

*This is an abstract of the stenographic report of my remarks at the Tennessee State Medical Association meeting in Knoxville, April 5, 1916. For a fuller discussion of many of the points touched upon in this talk than is possible in the pages of this Journal, the reader who may be interested in the subject must be referred to my book, "Edema and Nephritis," second edition, 1916, published by John Wiley & Sons, New York City.

branes which hold the dissolved substances in their places.

Biologically, however, this conception of the cell is impossible; for were our cells surrounded by such semipermeable membranes, our food substances and oxygen could never get into them, and the products of cell metabolism, like urea, carbon dioxide, etc., could never get out. Obviously, if our cells are to live, both those things must be continuously possible.

To get around these difficulties, the proponents of the osmotic theory have made the membranes, supposed to exist about the cells, partially permeable. But as soon as this is done, concentration differences within and without the cell can no longer come to pass, for the diffusion of the dissolved substances from regions of higher concentration to regions of lower will immediately wipe out such inequalities. The concentration differences necessary to move the water will, therefore, no longer come to pass. And yet, physiologically, water must at all times be able to pass into and out of cells.

As readily apparent, therefore, the adherents of the osmotic hypothesis can take their choice. They can have semipermeable membranes around their cells, and so make concentration differences move the water into and out of them, but no food, no oxygen, and no metabolic products; or they can dispense with these membranes, and so get dissolved substances into and out of the cells, but no water. Physiologically, however, it must be possible for both these things to happen, and without interruption. No theory which encounters difficulties in any of these directions can ultimately survive.

III. THE COLLOID THEORY OF WATER ABSORPTION.

In casting about for elements which might be used for a better understanding of the laws of the absorption and secretion of water (and of dissolved substances) as observed in the human body under physiological and pathological circumstances, we investigated the properties of the colloids—the very substances which on the osmotic hypothesis are cast aside as of little or no importance. A study of the colloids has shown that these not only play a rôle in the general problem of absorption and secretion, but that they play the dominant one, determining not only how much water and dissolved substances a cell,

tissue or the whole body may hold under normal circumstances, but also how much it will hold in various pathological states.

We shall devote chief attention to-day to the problem of the absorption and secretion of water. In order to illustrate the laws governing this and their biological significance, allow me to call your attention to the behavior of the protein colloid when subjected to different external conditions so far as their properties of water absorption and secretion are concerned.

I show you here a set of test tubes of uniform diameter, into each of which has been introduced the same weight of a dry protein—namely, fibrin. Let us see how the protein behaves when different kinds of solutions are poured upon it. If the unit weight of fibrin is thrown into water, swells somewhat; but if the same amount is placed in a test tube containing a very dilute acid it swells very much more. Instead of absorbing, for example, some five or six times its weight of water, it may in the acid be made to absorb some twenty, thirty, or even forty times its weight. If the acid is neutralized through the addition of an alkali, the absorbed water is again given off while the fibrin shrinks. Water absorption is followed by water secretion—in other words, the process is reversible. Let me add that all acids behave in this way. Generally speaking, the swelling is the greater the higher the concentration of the acid, though with the so-called “strong” acids a concentration is finally reached beyond which further addition of acid does not increase, but decreases, the amount of water absorbed.

Let me show you next another set of tubes. All these tubes contain the same concentration of an acid. The first contains pure acid only; all the rest have been added progressively greater amounts of a salt (sodium chloride). You observe that the addition of the salt has reduced the amount of swelling in all the tubes, and that the greater the concentration of the added salt, the greater the amount of this reduction. Observe, too, that we have added to the acid a neutral salt. The effect you see is, therefore, not merely due to a neutralization of the acid. In other words, even though we have practically the same acid concentration in all the tubes, we have produced more and more dehydration of the protein as we have increased the concentration of the salt. This extremely interesting antagonism between

acids and neutral salts is of the greatest physiological and pathological importance.

Let me now call your attention to a third set of tubes. In this set a constant weight of fibrin has again been introduced into a definite concentration of an acid, but to the acid there has been added this time the same concentration of *different salts*. When the effects of a series of sodium salts are thus compared, it is found that they all again reduce the swelling, but in very different degrees. The chloride of sodium, for instance, produces the least dehydration; the bromide and nitrate are somewhat more powerful; the acetate occupies a middle position; most powerful are the sulphate, tartrate, and citrate. If we compare the dehydrating effects of a set of salts which have a common acid (a set of chlorides, for example), we find that ammonium, potassium, and sodium salts are less active in producing dehydration than magnesium or calcium, and these last are less effective than copper, iron, or mercury.

You may be inclined to say at this point that these academic tables are of no interest to you in your problems of practical medicine. Let me emphasize, therefore, that they are. As a matter of fact, every good doctor has worked empirically with these facts for decades. What we call the "saline cathartics" are nothing more than those salts which, without being particularly poisonous, are peculiarly powerful in bringing about a dehydration of protein colloids. The cathartic salts diffuse into the intestinal wall, dehydrate it, and the squeezed-off water then keeps the intestinal contents liquid. FRANZ HOFMEISTER (in somewhat different terms) pointed this out many years ago; and while many have grown famous opposing his fundamental suggestions, we are destined shortly to return to his views.

With the facts just discussed in mind, you see at once why sodium chloride, sodium bromide, sodium iodide, etc., are not ordinarily used as saline cathartics. They are salts which, when introduced into the gastrointestinal tract, diffuse into the mucous membrane of the intestines; but since they do not produce much dehydration except in high concentration, they are not likely to produce the fluid stools characteristic of an effective catharsis. On the other hand, sodium phosphate and sodium citrate, which, even in low concentrations, are powerful dehydraters of protein colloids, are our standard saline cathartics.

Since magnesium is a better dehydrater than sodium or potassium, magnesium sulphate and magnesium citrate are more powerful cathartics than the corresponding sodium or potassium salts, and the older doctors knew and worked with this fact long before the reason for it was understood. The tremendous dehydrating effects of mercury are taken advantage of in everyday practice when we use calomel for cathartic purposes. Even though this salt is practically insoluble, still those trifling amounts which do dissolve produce the tremendous dehydration which we observe after an effective dose of this drug.

IV. THE ANALOGY BETWEEN THE ABSORPTION OF WATER BY PROTEIN COLLOIDS AND BY TISSUES.

I have detailed now a series of test-tube experiments which we may apply with entire safety to the problems of water absorption and secretion as observed in the body. Not only qualitatively, but quantitatively as well, *every cell, tissue, and organ in such a complicated body as our own—in fact, the body as a whole—behaves in the same fashion as do the fragments of protein colloid in these test tubes*. Thus muscle, eyes, brain, liver, kidney, etc., swell more in any acid than they do in water. The addition of any salt to the acid reduces the amount of this swelling, and this the more the higher the concentration of the added salt. At the same concentration, different salts are unequally effective in this regard; and here the same order is noted as in the case of the pure proteins, such as fibrin.

The amount of swelling which any protein colloid such as fibrin shows in a neutral medium corresponds with the normal swelling (normal water content) of any cell or tissue. The increased amount of swelling when acid is added corresponds to the increased swelling of a cell or tissue when this is œdematous. Technically put, we say that the colloids of protoplasm have normally a certain hydration capacity, and that when the tissues have become œdematous their colloids have assumed a state of increased hydration. Just as acids bring about an increased hydration capacity of fibrin, so also does their abnormal production or accumulation in the body increase here the hydration capacity of the body colloids. Not only can it be shown that every such abnormal production or accumulation of acid in the body is followed by an œdema, but, conversely, it

can be shown that every case of œdema gives evidence of such an abnormal production or accumulation of acid. What are listed as "causes" of œdema (heart disease, arteriosclerosis, respiratory disease, anæmia, intoxications and infections of various kinds, etc.), all have in common this point: that they are means by which an abnormal production or accumulation of acid in a part or all of the body may be brought about.

But acids are not the only substances which can increase the hydration capacity of a protein colloid or of a tissue, though it seems at present that they are the most important. The alkalies do this also. But more interesting is the fact that urea, pyridine, and certain amines are also able to do this. Urea and urealike substances tend to accumulate in the body in certain types of kidney diseases, and many of the toxins of the infectious diseases are amines. The œdemas encountered in these clinical conditions may, therefore, be in part accounted for through the presence of this second class of substance in some or all of the tissues of the body in addition to the presence of acids.

V. THE STATE OF THE WATER IN THE BODY.

But not only do all the tissues of the body hold their normal or abnormal amounts of water as hydration water in combination with the body colloids, but the liquids of the body, such as the blood and lymph, do this also. In other words, *there is in our bodies no "free" water analogous to the water we drink*—it exists in all the tissues and body fluids only in combination (as water of hydration). When any free water appears in the body, it is quickly removed by one of the secretory organs (such as the kidney). Conversely, it is impossible to get any secretion except as we furnish the secreting organ free water. To apply this to the kidney, we may say that we will get a secretion of "urine" only in proportion to the amount of water given the patient to drink.

VI. DIURESIS AND DIURETICS.

Water is, in other words, the only true diuretic. What, then, do we mean when we speak of a diuretic substance or drug? A diuretic is any substance which aids in furnishing a working kidney free water or which helps to maintain in a kidney the necessary conditions—such as oxygen supply, etc.—which are needed to permit the kidney to do its work. Urinary secretion

may fail either because we furnish no free water or because a kidney is not given the proper conditions under which it may do its work.

The intravenous injection of any amount of blood, blood serum, or a hydrophilic colloid in which all the water is bound to the colloid, is followed by no increase in urinary secretion. This is because no free water is given. The same amount of water when given free, as in the form of a saline solution, is followed by a prompt increase in urinary flow.

When equal amounts of sodium chloride solution are injected, we get increasingly greater amounts of urine, with progressive increase in concentration of the salt. This is because the salt dehydrates the body tissues, and the free water thus obtained is added to that which is being injected. The salt owes its diuretic action, therefore, primarily not to any effect upon the kidney, but to its action in dehydrating the colloids of the whole body.

When equal amounts of equally concentrated solutions of different salts are injected, it is found that the order in which they produce diuresis is the same as the order in which they dehydrate (protein) colloids. Thus, in a series of chlorides, the metals arrange themselves in the following order, the one most powerful in producing diuresis being named last: potassium, sodium, magnesium, strontium, calcium. In a series of sodium salts the acid radicals arrange themselves as follows: chloride, nitrate, bromide, iodide, acetate, phosphate, sulphate. The greatest diuresis of all is produced by a salt which is made up of a powerfully dehydrating base with a powerfully dehydrating acid—for example, magnesium sulphate.

The diuretic action of these different salts parallels completely their dehydrating effect upon (protein) colloids—a fact which again indicates that they owe their action primarily to their effect upon the body as a whole, acting as diuretics only as they furnish a working kidney free water.

To diuretics of a second order belong drugs like digitalis or caffeine, which by their action on the heart and respiration assure a better oxygen supply to the kidney and the body tissues generally. Through improvement in oxygen supply to the kidney and the body tissues generally, the kidney is not only permitted to secrete the free water available for secretion, but improved oxy-

gen supply permits oxidation of the various acids accumulated in the tissues of the body; and so the tissues yield free water, which becomes available for secretion. Whether we deal with normally hydrated or abnormally hydrated tissues, the effect is the same. Under the influence of "diuretics" an œdema is decreased, but not because the secretory organs of the body have been "stimulated" to pull water out of the tissues, but because the "diuretics" act upon all the tissues of the body, decrease directly or indirectly their hydration capacity (lead to their shrinking, in other words), and the squeezed-off water is then thrown off by the kidneys, bowels, skin, or lungs.

VII. THE NATURE OF NEPHRITIS.

After this general introduction regarding the nature of water absorption and secretion by protoplasm under physiological conditions and in states of œdema, let us pass to the consideration of a specific organ—namely, the kidney—which under certain pathological conditions suffers changes of which œdema constitutes an important part. In order to make my argument clear, let me begin by stating a general conclusion and then adduce the evidence which justifies it.

I use the term "nephritis" in its generally accepted clinical meaning as covering that symptom complex which is characterized by the appearance of albumin in the urine, certain morphological changes in the kidneys, the associated production of casts, quantitative variations in the amount of urine secreted, quantitative variations in the amounts of dissolved substances secreted, etc.

In order not to confuse things, let us consider first such nephritides as follow, for example, a general intoxication of the kidney—in other words, the so-called "generalized parenchymatous nephritis." Where belong the other types of nephritis (as, for example, the chronic interstitial type associated with a cardiac hypertrophy and high blood pressure), we shall see later.

All the changes that characterize nephritis are colloid-chemical in nature and are produced through changes in the colloids making up the kidney. As of first importance in bringing about these colloid-chemical changes, I count an abnormal production or accumulation in the kidney of acids and of certain other substances which in their action upon colloids behave like acids.

If this conclusion is correct, it must be demonstrable in three directions. First, we must be able to show that there is evidence in every case of nephritis of an abnormal production and accumulation of acids and similarly acting substances in the cells of the kidney. Second, we must be able to prove the converse—namely, that any method by which such an abnormal production and accumulation may be brought about results in the signs and symptoms characteristic of nephritis. Third, if we succeed in analyzing correctly, in the terms of colloid chemistry, the changes which are characteristic of what clinically we call "nephritis," we should be able to do something to relieve these clinical signs and symptoms, or, better, prevent their development. This last statement takes us into the heart of the problem of treatment, which we shall in consequence consider last.

VIII. EVIDENCE FOR THE ABNORMAL PRODUCTION AND ACCUMULATION OF ACIDS AND LIKE SUBSTANCES IN THE KIDNEY.

What evidence have we, first of all, to show that in every case of nephritis there is evidence of an abnormal production or accumulation of acid and similarly acting substances in the tissues composing the kidney? Proofs for this may be brought from three directions. First, when the urine is analyzed, it is found that its acidity (whether measured by the old method of titration or in the more modern terms of the hydrogen ion acidity) is always high. Second, as even the older clinical students of the problem knew, the so-called "alkalinity" of the blood is reduced. These things already justify the conclusion that that which lies between the blood and the urine—namely, the kidney—must show an abnormally high acid content. But proofs for this may be brought directly. Certain dyes, for instance, may be introduced into the kidney which will show color only when a certain degree of acidity is reached. Such dyes do not stain a normal kidney; but when a kidney has been rendered nephritic, it takes up the stain readily.

IX. EVIDENCE THAT SUCH ACCUMULATION IS FOLLOWED BY NEPHRITIS.

The converse of the above statement—namely, that any scheme which results in an abnormal production and accumulation of acid in the cells

of the kidney is followed by the signs and symptoms of nephritis—is of great importance in our everyday clinical work, because what we call the “causes” of nephritis are, as we shall see, only such things as lead to an abnormal production and accumulation of acid and like substances in the kidney. Since we shall, in discussing treatment, find ourselves under the necessity of recognizing and removing as many of such features as we can, it behooves us to get them clearly in mind.

The quickest way in which to increase the acid content of the kidney is to inject acid intravenously. When we do this, we find that the animal thus experimented upon begins to show a decrease in urinary output, which may go to the point of complete suppression, while such urine as is secreted is not only highly acid, but charged with albumin, blood, and casts. At the same time, the animal begins to retain the water that we are injecting along with the acid, and so develops a generalized oedema. In other words, the animal shows all the signs and symptoms of a so-called “parenchymatous nephritis.”

Some of you will feel like interposing at this point that this is all very good from an experimental point of view, but that it has nothing to do with the practical problems of everyday medicine. Let me assure you, therefore, that it has. As you know, we produce, even normally, enormous quantities of acids in our bodies in the course of our ordinary metabolism. The amount and rate of production of this acid can, however, be greatly increased at will. Whenever our muscles contract, they do so by reason of a production of acids (chiefly lactic acid) in them. When we exercise quietly, the oxidation of these acids follows rapidly; so they never accumulate to any extent in the muscles. But suppose, as in athletic endeavors of various sorts (rowing, running, basket-ball matches, etc.), we increase the rate at which the acid is produced. Our respiration and circulation then become accelerated in the effort to supply us with sufficient oxygen to oxidize the increased amount of acid thus produced. But when we work our muscles to the point of dyspnoea, it means that, in spite of the increased cardiac and respiratory activity, we are no longer succeeding in this attempt. The lactic acid, therefore, begins to spill over from the muscles into the general circulation, and by this is carried to the kidney. Under these cir-

cumstances we might expect to find albumin and casts in the urine. Perhaps you think that such hard athletic games occasionally yield a little albumin. It will interest you to know that they do—not a little, but a great deal. After hard athletic endeavors, athletes may show several grams of albumin to the liter and such quantities of casts as we see ordinarily only in examining the urines from acute nephritics.

Now the real reason why the athlete shows albumin and casts is because his respiratory and cardiac activity are inadequate, during the times of great acid production in the body, to furnish sufficient oxygen to oxidize the acid as formed. But, as I stated before, we need a good circulation and respiration even to oxidize those quantities of acids which are produced when the organism is in a state of comparative rest. This explains why, when the circulation becomes embarrassed (as in heart disease), or when the respiration becomes interfered with (as from a pleurisy with effusion), the acid accumulation in the body mounts; and as this acid accumulation makes itself felt in the kidney, albumin and casts appear in the urine.

But even if we do not interfere with the heart's activity or the respiratory activity, but interfere with the oxygen-carrying power of the blood, as through anæmia or carbon monoxide poisoning, we shall then also get this disproportion between the rate of acid production in the body and its proper oxidation, which again results in an abnormal accumulation of acid in the kidney, and, therefore, in the albuminuria and casts so common in these conditions. A lowering of body temperature, as incident to exposure to great cold, also brings this result about.

You will observe that I have thus far spoken of conditions leading to nephritis which, in the main, lie entirely outside of the kidney. I emphasize this because all such extra-renal factors must be discovered and removed as far as possible whenever we try to discover the cause for, or to relieve the signs and symptoms of, this clinical entity. But any cause which will interfere directly or indirectly with the normal oxidation chemistry of the body cells and which affects the kidney itself will lead to the appearance of albumin and casts in the urine and of morphological changes characteristic of nephritis in the kidney itself. It is for this reason that tumors pressing upon the afferent or efferent blood vessels of the

kidney, or an arteriosclerosis involving the whole or pieces of the kidney, a thrombosis, an embolism, or similar disturbances, all result in the appearance of albumin and casts in the urine. Or, without interfering with the circulation of blood into or through the kidney directly, we may make it impossible for this organ to use the oxygen which is brought to it. We shall, then, again have an abnormal production and accumulation of acid in the kidney. Thus it comes about that we poison the kidney and produce a nephritis with the toxins of an infectious disease; with chloroform, ether, or alcohol; with arsenic, uranium, chromium, or lead; or with such substances as phosphorus or the nitrites.

X. THE COLLOID-CHEMICAL CHANGES IN THE KIDNEY CHARACTERISTIC OF NEPHRITIS.

The acids (and similarly acting substances) which in their action upon the kidney lead to the various signs characteristic of this pathological condition, do so on the basis of the colloid constitution of the kidney about as follows:

The kidney is composed of a series of colloids. Those which interest us most and make up the bulk of the kidney are the protein colloids, and the general way in which they behave toward acids of various kinds has already been touched upon.

When such a protein colloid as fibrin is placed in a neutral solution (water), it swells somewhat. This is analogous to the normal state of the kidney. If a little acid is added to the water containing the fibrin, it swells much more. This is analogous to the enlargement of the kidney in nephritis (œdema of the kidney). But, at the same time that the fibrin swells in this way, it also tends to go into solution. This is analogous to the going into solution of the kidney substance in nephritis—in other words, to the albuminuria.

The grayness of the kidney cells in nephritis is due to the precipitation of a second protein colloid contained in the kidney cells. This second protein behaves like casein. Normally this is "dissolved" in the kidney protoplasm through the presence of alkali. Under the influence of an abnormal production of acid in the kidney, it is precipitated. The precipitation of this colloid with the swelling of the other gives the combination long familiar to the pathologists as "cloudy swelling."

Under the influence of a little acid, the kidney falls apart into its morphological constituents.

The epithelial cells stick together and loosen in mass as the cement substances that bind the kidney structures together "dissolve." This marks the origin of the epithelial cast. By more prolonged action of the acid or with a rise in its concentration, the epithelial casts are converted into granular casts, and, later still, into hyaline casts. The hyaline casts can be reconverted into granular casts by neutralizing the acid or by adding various salts to a given concentration of acid.

The process of the secretion of water by the kidney is made up of two parts—first, an absorption of water from the blood by the kidney; second, a giving off of this same water into the uriniferous tubules. The available experimental facts can be most readily interpreted by regarding the former as a process of water absorption by the kidney colloids, and the second as a loss of water by these same colloids. The absorption half of this reversible reaction seems to be controlled by the production of carbon dioxide in the kidney cells, while the loss of this same carbon dioxide to the blood permits the subsequent loss of the absorbed water out into the uriniferous tubules. The presence of acid in the kidneys interferes with this play, and so with water secretion. A second reason for a failure of the nephritic kidney to secrete its usual amount of water lies in changes present in the body as a whole, whereby the body comes to hold on to water in such a way that none is left over as "free" water to be secreted, as already discussed.

The absolute decrease in the amount of dissolved substances secreted by the nephritic kidney is secondary to the absolute decrease in the amount of water secreted, for the secretion of any dissolved substance is secondary to the secretion of water. The water washes the dissolved substances out of the kidney cells as it flows down the uriniferous tubules. The reason why the proportion of the various constituents to each other is changed in nephritis is due to the fact that the *adsorption* properties of the kidney colloids are changed through the presence of an acid; and so the kidney cells not only absorb the various urinary constituents in a different proportion from the blood, but these are also washed out of the cells after adsorption in proportions different from the normal.*

*The "fatty changes" observed in nephritis are not touched upon here. "Fatty degeneration" is also a colloid-chemical problem, as Marian O. Hooker and I have recently shown. See *Science*, 43, 468 (1916), as well as the current numbers of the *Kolloid-Zeitschrift*.

XI. CLASSIFICATION OF THE NEPHRITIDES.

What has been said covers the essential elements of that which constitutes the picture of what we commonly call "acute" or "generalized" parenchymatous nephritis. But we know that there exist also chronic types of nephritis, and that in some of these we observe high blood pressure, cardiac hypertrophy, etc. This brings us to the matter of the classification of the nephritides.

There is really only one type of nephritis—parenchymatous nephritis. There is, however, a difference in the amount of kidney substance that may be involved. It is well to distinguish between *generalized and focal nephritis*. It is in the generalized type that we observe the greatest decrease in urinary output, the most highly concentrated and most highly acid urine, the greatest amount of albumin, and the largest number of casts. When only smaller parts of the kidney are involved, all these signs are proportionately less. The first type of nephritis is found in cases of general intoxication, as in scarlet fever or in carbon monoxide poisoning, after an anæsthetic, or in the more chronic types of poisoning, as with phosphorus, chromium, or lead. If larger or smaller pieces of a kidney thus affected die and the defect is replaced by connective tissue, the kidney substance is reduced in amount and we find on autopsy the so-called "*secondarily contracted kidney*"—one type, in other words, of the so-called "chronic interstitial nephritis." As long as one-fourth of the total kidney substance which a normal animal has is left intact, the animal (or patient) may be unaware of the fact that he has kidney disease, for even less than this amount is adequate for all ordinary demands. Neither does such an animal (or patient) show any increased blood pressure, cardiac hypertrophy, uræmia, or any other of the alleged consequences of kidney disease. He may live and die without being aware of his kidney condition, and we have at the present no way of diagnosing such a state before death.

In the commoner types of chronic interstitial nephritis which we find in association with blood-vessel disease, heart hypertrophy, and high blood pressure (the so-called "*primarily contracted kidney*"), we also deal with a gradually progressing focal destruction of kidney substance. The primary change in this condition is not kid-

ney disease, however, but *blood-vessel disease*; and the general signs observable in such a patient are primarily not due to defective elimination of poison through the partially destroyed kidneys, but to the effect of the vascular disease itself in the different organs of the body. The heart hypertrophy and the high blood pressure are nature's method of meeting the consequences of the vascular disease. In consequence of the changes in the blood vessels, one fragment after another of the kidney may be destroyed and replaced by connective tissue; but between these spots the kidney is largely normal, and so the decreased urinary output, the albuminuria, the casts, etc., may be largely or entirely absent in these patients—at least in the earlier stages of their disease.

While infections of the kidney are not ordinarily classed with the true nephritides, they might as well be. The kidneys here show the same changes and die in the same way as when a poison affects a whole or any part of the kidney. An infection involving the whole kidney (general intoxication) shows much albumin, many casts, and a small water output. When the infected spots are small, as in the early stages of renal tuberculosis, these findings are also less intense. And since blood-vessel disease does not usually go with the ordinary infections, high blood pressure and cardiac hypertrophy are usually absent in these cases of kidney infection.

XII. ON THE TREATMENT OF NEPHRITIS.

These remarks will suffice to indicate why I have formulated the general rule for the prophylaxis and treatment of nephritis in the following terms: As far as possible, *avoid, remove, and combat every condition that favors the abnormal production or accumulation of acid and like-acting substances in the kidney*. Evidently the pathological condition of the patient must be taken into consideration in the application of this rule. An anæsthesia nephritis, for example, with suppression of urine, will call for a more aggressive therapy than a nephritis secondary to a slowly progressing arteriosclerosis. If we succeed in getting the first nephritic over his immediate kidney symptoms, we may make a hopeful prognosis; for when he has exhaled his anæsthetic, he has rid himself of the condition that was responsible for the abnormal acid content of his kid-

neys. But in the case of the second nephritic, so hopeful a prognosis cannot be made; for while we may also benefit him, he continues to carry the original condition that brought him to us—his arteriosclerosis—even after we have treated him.

My rule for the treatment of the threatened or established case of nephritis may be summarized in these words: *Give alkali, salts, and water.* The reasons in brief are as follows: The alkali is given in order to neutralize the acid present in abnormal amount in the kidney and in the other oedematous organs of the body; the salts are indicated (and sodium chloride is no exception) because the various changes induced in the kidney colloids by acids are counteracted by adding to such acid any salt, even a neutral salt; we need to give water in order to have more of it present in the body than is necessary to saturate all the body colloids, otherwise we shall have no "free" water left for the secretion of urine.

For exact details as to how such a scheme of treatment is to be used, for only its proper use will give satisfactory results, the reader must be referred to a longer discussion than is here possible.*

It is advantageous to add to the alkali, salt, and water therapy, already discussed, an active administration of sugar, dextrose (chemically pure, anhydrous glucose), either by rectum or intravenously. Or dextrose or some disaccharide or starch may be given by mouth, if the patient is able to take food or is not vomiting. The reasons for giving sugar are two—first, the older, well-recognized one that carbohydrate starvation is very common and a potent cause of "acidosis;" and, second, because sugar, which is comparatively ineffective in reducing an excessive hydration of protein when induced through an accumulation of acid, is very effective in reducing the hydration produced by other means, while the salts which are very effective in reducing an acid hydration largely fail when the hydration is produced by other means. As we wish to combat all the possible causes of the hydration at once, we give besides the alkali both salt and sugar.†

*See my book, "Oedema and Nephritis," second edition, pages 537 to 644, published by John Wiley & Sons, New York, 1916.

†Under no circumstances are alkali and sugar ever to be boiled together or mixed and kept in stock. They are best given at separate times, or are not mixed until the very moment that they are to be administered.

XIII. ON THE ALLEGED CONSEQUENCES OF KIDNEY DISEASE.

A final word is necessary regarding the alleged consequences of kidney disease. I am sorry that time does not permit me to go into the details of Dr. CALHOUN'S paper. It is one of the most brilliant and logical presentations of the changes observable in the fundus and the association of these changes with kidney disease that I have ever heard. Now, why do I say this? I say it because Dr. CALHOUN brings out in clear fashion that most of the fundus changes are not secondary to kidney changes. That is the important point; for, as we shall see in a moment, nearly everything that we have been calling the consequence of kidney disease is not that at all, but something totally different, which needs to be looked at differently and treated from a point of view totally different from the ordinary.

It is generally urged that the generalized oedema, the "uræmia," etc., of a patient is secondary to the kidney disease. This is in the main incorrect, for nephrectomized animals either develop no oedema at all or only a very slight one as compared with the oedema developed, for instance, after the injection of uranium nitrate. Neither do they die with signs or symptoms which clinically we call "uræmia," even though they live many days. But when we give an animal a "kidney poison" of some sort, such as uranium, it develops an oedema in the course of a few hours which at the end of about two days may have increased to represent fifty per cent of the original body weight of the animal. This means only one thing—that *what we call the "consequences" of kidney disease are not consequences, but are the same thing as the kidney disease manifested in the different organs of the body*, and all due to the same poison which originally produced the kidney change. The headache, stupor, coma, and convulsions of "uræmia" are due, in the main, to an oedema of the brain; the changes in sight, to an oedema of the optic nerve or retina; the vomiting, to an oedema of the medulla; and the generalized oedema, to a swelling of the body tissues generally—all induced through the same poison circulating through the body and responsible for the oedema of the kidney (nephritis).

What relation does the "uræmia" of chronic kidney disease, associated with cardiac hypertrophy, high blood pressure, etc., bear to the uræmia

just discussed? Is it due to retained poisons which the kidney has failed to excrete? Not in the main. This "uræmia" is also an œdema of the brain, but is induced this time through the defective blood supply to the brain, brought about through vascular disease. These "uræmic" attacks are periodic œdemas, and are analogous to the periodic glaucomatous attacks (œdemas of the eyeball) to which these same patients are liable.

XIV. REMARKS ON VASCULAR DISEASE.

These facts will serve to emphasize why, in treating our patients with chronic interstitial nephritis, we need from now on to pay more attention to the primary vascular disease and to its relief than has thus far been our custom. We must stop treating the kidneys as something primary, and the high blood pressure, cardiac hypertrophy, etc., as things bad in themselves, which they are not. We must do everything in our power to stop the progress of the blood-vessel disease itself. And this raises the question of the cause for the pathological changes in the blood vessels. Everything has been named as a cause of blood-vessel disease, though that any of the things are really concerned can hardly be said to have been proved. However bad alcohol, gastrointestinal poisons, etc., may be for an established vascular disease, this is not synonymous with saying that they cause it. Whenever a general intoxication strikes an organ, that organ is usually affected fairly uniformly; and so we should expect that if any general poison were responsible for vascular disease, all parts of a blood vessel—say, all the media or all the intima—would be uniformly involved. But it is characteristic of vascular disease that it appears in spots. There must, therefore, exist for it a spotty cause, and not such a general cause as a generalized intoxication.

It is characteristic of microorganisms producing thrombotic changes in the smaller blood vessels to give rise to such spotty destructive lesions. In any case of vascular disease careful search should, therefore, be made for possible infections. Of first importance, no doubt, stands syphilis. In cases where such a cause could be shut out with a fair degree of certainty I have looked for infected tonsils, infected teeth, infected ears, infected antra, infected pelvic organs, and old genito-urinary infections as possi-

ble sources of microbic infection of the blood stream, with thrombotic changes in the smaller capillaries of the parenchymatous organs and in the vasa-vasorum of the larger blood vessels; and it has seemed to me that through removal of such chronic foci of infection from accessible regions, together with a scheme of living directed toward building up the natural resistance of the body to infection, greater relief was assured patients with cardio-vascular-renal diseases than by our older methods.

ONE HUNDRED CASES OF SACRAL ANÆSTHESIA, WITH COMMENT.

BY D. R. PICKENS, M.D.,

Lecturer on Rectal Surgery in Vanderbilt University and Chief of Rectal Clinic at the Vanderbilt Hospital.

Nashville, Tenn.

Having used sacral anæsthesia with some success, a desire to give others the benefit of my experience has induced me to report these cases. On account of the scarcity of novocain, I have only used the method a few times since February, 1916, retaining the novocain on hand for cases unable to take a general anæsthetic. However, at the Vanderbilt Clinic I have been trying other drugs, and recently have been using a mixture of sodium bicarbonate (C. P.) gr. 1-5, sodium chlorate gr. 1-7, cocaine hydrochloride gr. 1, dissolved in 30 c. c. of distilled water. This solution is made exactly like the novocain mixture and 10 minims of adrenalin sol. 1-1000 added after cooling. I have had fair success with this solution, but it takes a few minutes longer for anæsthesia and is not so successful as the novocain. However, after trying all the known local anæsthetic drugs on the market, this solution has given the best results in my hands; but I have not used it in enough cases to give a final opinion as to its exact value and percentage of success. I do think it is safe, and am giving it a fair trial. If any one can suggest anything better, I shall be glad to try it.

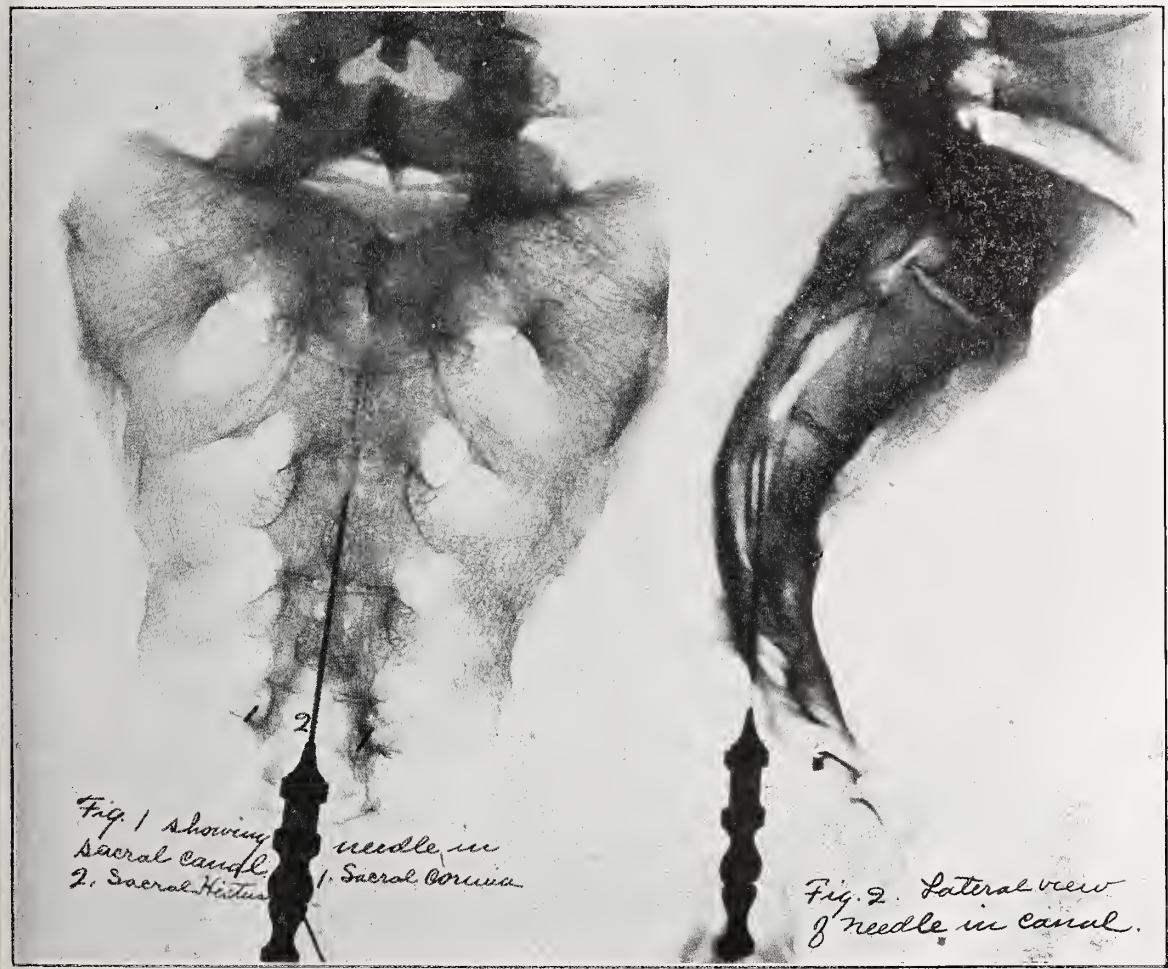
The cases reported in this paper include only the cases in which the solution of novocain was used, as I have purposely omitted the recent cases with other drugs and some of my late novocain cases.

Sacral anæsthesia has passed the experimental stage and is now a well-recognized anæsthesia.

Many genito-urinary surgeons are using it extensively, especially in the bad prostatectomy cases, and there is no doubt that it is a life-saving procedure in such extreme conditions. It is also a great step forward in cancer of the rectum, either in the combined or one-stage operation, and can be well used in all rectal operations of any severity. After using it in more than one hun-

thing that will decrease the amount of a general anæsthetic is of some value.

In my first one hundred cases I have had to give ether six times (two of these were old patients, in which the canal was found ossified), making ninety-four cases operated on without a general anæsthetic. Of these, eighty-one were perfect, feeling no pain, and thirteen had to have



dred cases of rectal surgery, including almost all known pathological processes of this part, I am more enthusiastic than in the beginning and unhesitatingly recommend it as a safe method of nerve blocking. The only objection that any one has offered to date is that it occasionally fails to produce anæsthesia; and this is no serious objection, as I can prove by several anæsthetists that it takes about one-half the amount of ether in cases that have had the solution and failed to produce anæsthesia as it does without it. So any-

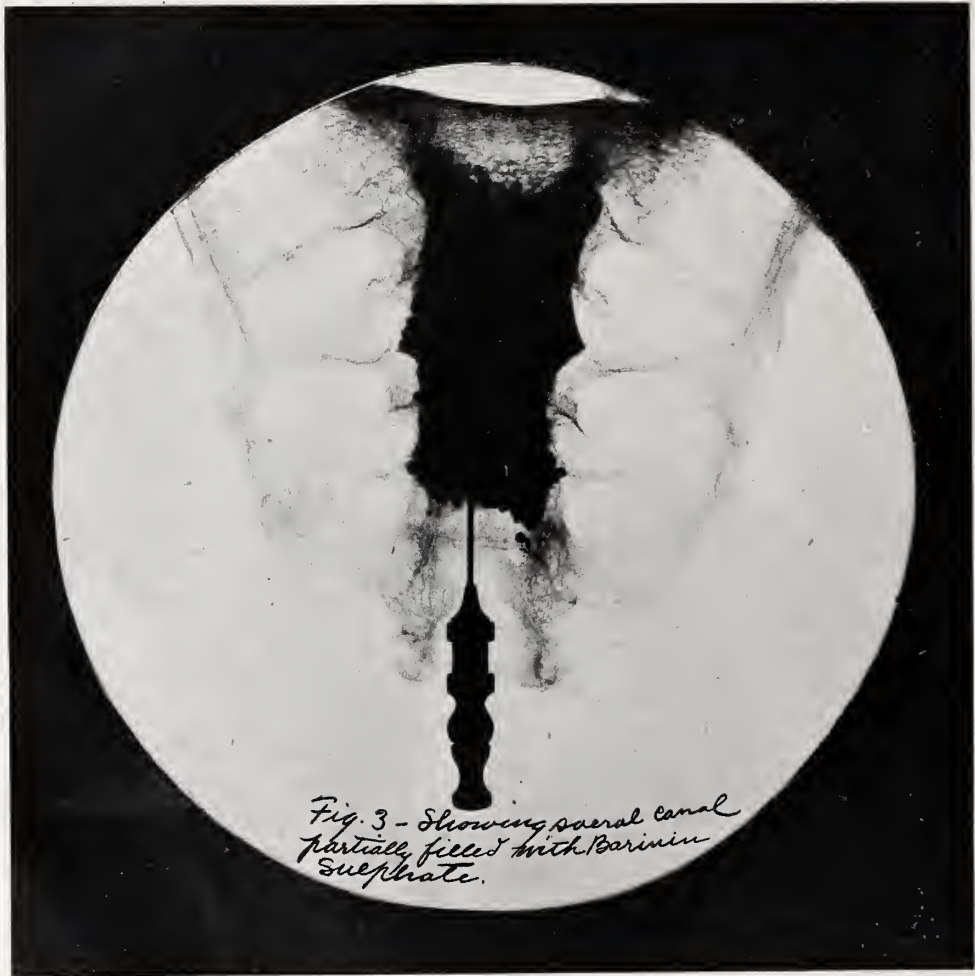
more or less infiltration of the surrounding tissues. This report includes my first cases, and were not selected cases. Some were aged, some young, some fat, and some thin. Extremely fat patients are not good subjects for this method—why, I am unprepared to say, unless there is more fatty tissue about the nerve sheaths. I have dissected several sacral canals, but not enough to say why this is true.

The longest operations performed were resections of the rectum for cancer, the longest of

which was of two hours' duration. In this case the skin was noticed to be slightly sensitive to the last sutures. The formula used was Læwen's, and I think it is the best. This solution must always be made and used immediately. If not made correctly, one has failed in the beginning. It must be placed in the canal and given time to infiltrate the nerve sheaths, which are very dense

In using the method, I have tried to view it with fair mind as to advantages and disadvantages. I could have had a greater percentage of perfect anæsthesias if I had selected my cases; but I took them as they came, and the only mishap—or, I might say, mistake—was, in one case I broke a needle which was too small and frail.

The needle for this injection should be about



in this region. Large amounts of weak solutions are followed with better results than a small amount of stronger solutions. The average time in this series of cases was 13.1 minutes, the shortest being 6 minutes, the longest 20 minutes. I would like to say again that this is not a spinal anæsthesia, but is extradural and is not followed by the many unpleasant results of that method; and if it fails, ether can be given safely, requiring much less than if the solution had not been injected.

the size of the ordinary lumbar puncture needle, with a stylette, which should be in place when the needle is inserted and when withdrawn. If the needle should by accident be pushed into the spinal canal, the spinal fluid would flow much easier when the stylette is withdrawn; again, if it should enter a vein, it would be more readily detached. These two accidents must always be borne in mind and avoided. The stylette adds additional strength on withdrawal and prevents escape of solution.

In a few of these patients there was noticed a transient pallor and vertigo, which was noticed either before or so soon after the solution was injected and subsided so rapidly that it could not be attributed to the injection. Since I stopped giving morphine one-half hour before the operation, such symptoms have rarely occurred; so I attribute these symptoms either to the morphine or a nervous manifestation. Bull mentioned the same symptoms, and says that they could not be attributed to the injection. He reports sixty-four cases, with 84.4 per cent with perfect result and 15.6 per cent with no result.

One of my cases—a woman seventy-five years of age—developed pneumonia, following a hemorrhoid operation. She had a severe cold at the time and possibly would have had pneumonia without the operation. Lewis and Bartels, in the *Lancet-Clinic*, say: "There have been no bad results or fatalities reported following the use of epidural injections (sacral anæsthesia). The chief advantages of sacral anæsthesia are: Extreme safety and absence of unpleasant or dangerous after effects, as nausea, vomiting, pneumonia, etc. It has enabled us to operate on a class of patients in whom the risk of using general anæsthesia would have been too great. We have been so well impressed with the success of the method during six months' use of it that we believe it is destined to change largely the surgery of the pelvis, especially for the aged, feeble, and decrepit. Prostatectomy is at once relieved of one of its greatest objections."

Cathlin, Læwen, and others have reported series of cases with no fatalities; and, so far as I can determine from the literature, no bad results have followed its use, and the men who have used it are very enthusiastic over the method. Arthur E. Hertzler, of Kansas City, in a recent article, says: "Prostatism presents one of the most frequent dilemmas in the choice of an anæsthetic. The operation of election, viewed from my experience, is performed by a combination of sacral blocking and direct prostatic infiltration through a suprapubic wound made at the time of operation or as a preliminary operation some days before."

I don't believe the method is used as often as it should be, but I think it is destined to be the choice of anæsthesia in all major operations on the vagina, perineum, penis, and rectum. Some have claimed that such large doses of novocain

produces nephritis. After reading the article in the *American Journal of Surgery*, I have had careful examination of the urine before and after operations, and in twenty-five cases observed there was never any evidence of nephritis found, except in four cases that had nephritis before, and those were not made worse. While this is too small a number of cases to deny that it never occurs, it does prove that it is certainly not very frequent.

The one hundred cases include the following pathological conditions:

Fistulæ	30
Fistulæ and hemorrhoids	14
Hemorrhoids (uncomplicated)	20
Recto-vaginal fistulæ	4
Hemorrhoids and fissure	10
Hemorrhoids and stricture	1
Hemorrhoids and polypi	1
Hemorrhoids and urethral caruncle	1
Hemorrhoids fistulæ and recto-vaginal fistulæ	1
Nonmalignant stricture	5
Nonmalignant stricture and fistulæ	3
Ischiorectal abscesses	2
Lynch operation for pruritus and hemorrhoids	1
Complete rectal prolapse	1
Papillitis and cryptitis	1
Amputation cervix and urethral caruncle	1
Cervical fibroid given for Dr. L. E. Burch	1
Extirpation of rectum for carcinoma	2
Extirpation of rectum for multiple adenomatous growths and general fibrous conditions of rectum	1
Total number	100

The average time taking solution to produce anæsthesia was 13.1 minutes; shortest, 6 minutes; and I never waited longer than 20 minutes; if no anæsthesia at the end of 20 minutes, ether was given. Out of this number of cases there were six failures, in two of which I was unable to enter the canal, thirteen cases had fair anæsthesia and operation was completed by local infiltration, and 81 per cent were perfect in every way. Out of the one hundred cases reported, ninety-four were operated without a general anæsthetic. There were no deaths in the series, but several would have been refused relief had it not been for sacral anæsthesia.

He who builds up health lays up treasure in the Bank of Nature.

Scarlet fever kills over 10,000 Americans each year.

PREVENTION OF BLINDNESS IN TENNESSEE.*

BY ROBERT FAGIN, M.D.,

Associate Professor of Ophthalmology, University of Tennessee,

Memphis, Tenn.

Let us study together now for a short time and ascertain if Tennessee is doing her part in this national campaign for the conservation of vision and the prevention of blindness. If our state is not doing her part toward protecting her citizens' greatest asset—their eyesight—then whose fault is it? Is it the fault of our state laws or their nonenforcement, or is most of our blindness in Tennessee still due to ignorance on the part of her citizens? I take it that the latter is true, and that ignorance on the part of the laity, coupled with indifference on the part of our profession, is the cause of more than three thousand people being totally blind in the state of Tennessee. If we, as representatives of our state's medical profession, share in this calamity, then is it not up to you and up to me to do all in our power to stop this needless waste of human eyes?

Our national committee on prevention of blindness gives out the startling fact that fifty per cent of all blindness is due to ignorance or to criminal neglect—in other words, is wholly preventable. Tennessee has six thousand blind citizens, half of whom are blind from ignorance or neglect. Think of a town of three thousand inhabitants, each individual entirely blind, whose vision, with the proper treatment, could have been saved! Is this picture not enough to stir you and me into greater activity lest our town of blind inhabitants continue to grow and our state—the great republic of Tennessee, that we all love so well—be placed *first* among the six states having the most blindness? New Mexico now occupies this unenviable position, and Tennessee—a most deplorable fact to admit—now has the fifth place. New Mexico has 169 blind persons to every 100,000 inhabitants, Nevada has 118, Arizona has 95, Kentucky has 94, Tennessee has 89, and Virginia has 80.

It is estimated that six thousand people are being added to the blind list in the United States each year. Half of this blindness is preventable. How shall we go about stopping this? Why

waste these good eyes? There is work for each of us. We must educate. Ignorance must be slain. Mothers must be taught to take the proper care of their babies' eyes. The child itself then must be taught to continue to take care of its eyes. The nurse, the midwife, the doctor must fully understand the care of the new baby's eyes, and must see that each and every new baby's eyes, whose care he or she has, are properly looked after at birth. If this were done, we would eliminate at least one-fourth of the blindness right here in our own state.

Think of the cost alone, to say nothing of the inconvenience the individual experiences! It costs the state ten times as much to educate the blind child as to educate the normal child. Sometimes the blind citizen is dependent upon the state throughout a lifetime. If so, the care of this one citizen may cost the state, not only the loss of the life work of a normal citizen, but at least ten thousand dollars spent out of the state treasury in maintaining this blind individual. Only about twenty per cent of the blind in Tennessee receive aid from the state. Yet Tennessee spends more than fifty thousand dollars each year on these. Eighty per cent of the state's blind are either above or under school age, or they are self-supporting. If at least half the blindness in Tennessee is preventable, then why should we not get together in the future and prevent it? In order for our work to count for most, we must have a definite plan and each of us work to that end. Let me suggest this plan:

If each doctor in Tennessee would look on his life work as that of a teacher responsible for the health conditions in Tennessee, rather than looking on it as that of a healer of diseased conditions which already exist, a great step in advance would be made. In a fuller sense, this would mean that the eye, ear, nose, and throat men would be reading papers not only to the general practitioners, but would deliver lectures on prevention of blindness and similar subjects to schools, parent-teacher associations, mothers' clubs, *et cetera*, thus educating the people and stressing upon them the importance of eyesight. The laity is simply hungry for this information, and is certainly ready to do its part in this campaign which is now on in Tennessee for conservation of vision. But the specialists can only do their part of this great work. The general practitioner, the family physician, who comes in such

*Read at the meeting of the West Tennessee Medical and Surgical Association at Jackson, May, 1916.

close contact with the family, can do most. In fact, much of our blindness must be placed at his door. Whether he wishes to or not, he must treat eyes; and he should know enough about them to help in this nation-wide movement for preventing blindness. He should know that one-fourth of our blindness here in Tennessee is still due to his neglect in not treating the baby's eyes with a one-per-cent solution of silver nitrate at birth. The medicine costs less than a cent, and it only requires one minute of his time to use it; and this may give a lifetime of sight, or the neglect of it may mean a lifetime of blindness. It is a responsibility that must not be shirked. It must be met, and Tennessee's new law, signed by Governor Rye on April 3, 1915, makes it a misdemeanor, punishable by fine or imprisonment, if infection develops where the prophylactic has not been used. This law was fostered by Mrs. John P. Frank, of Nashville, a blind woman, who, to a remarkable extent, has interested herself and others so that this bill became a law at the meeting of our last session of the Legislature. She has prepared a four-page leaflet which explains ophthalmia neonatorum, its causes and its terrific result. She also explains its prevention. In this leaflet, too, is a copy of our Tennessee law. Every doctor should read it, and every one of us should see to it that this law is enforced. Governor Rye has recently appointed a state committee of forty members, whose duty it is to aid in the prevention of blindness in Tennessee, and not only to see to the enforcement of this law in all parts of our state, but to suggest additional laws which may be needed to keep so many of our citizens in the future from leading lives of blindness. This committee has a grand work before it, and we shall all watch with interest the splendid way in which it shall perform its great task.

I think we will be encouraged and made stronger for our work here at home if we will but look to our neighbor states, and even beyond them, and see just what is being done for conservation of vision and prevention of blindness.

In Kentucky, to our north, there is a well-organized society for the prevention of blindness, and from Miss Linda Nevill, its secretary, we learn that at the meeting of the Legislature this winter new bills will be asked to be added to their state laws so that vision will be saved. One

of these is an annual examination of the vision of each child in the public schools.

North Carolina, to our east, has just recently passed a bill for the prevention of blindness. This bill was fostered by the state committee. One of its members, Mr. John E. Ray, who has been superintendent of the State School for the Blind for the past thirty years, has done much in spreading the gospel of prevention of blindness in his state.

Thus, one by one, we could take up each of the forty-eight states, and we would see that, under the guidance of our National Committee for the Prevention of Blindness, each state is making an effort to reduce its blindness. Especially is this true of those thirty-six states which have compulsory education.

If the child is forced to go to school, then its eyes should be looked after, lest the school work do actual harm to the child's future vision. Every schoolboy and girl in Tennessee is entitled to this eye test.

Dr. Allport, of Chicago, who is a member of the Committee of the American Medical Association for Conservation of Vision, has devised test cards for the teacher, so that the vision of each eye of every pupil in the room may be tested. These cards are printed by F. A. Hardy & Co., of Chicago, who have them for sale. If the teacher finds that the vision is very poor in one eye and normal in the other eye, then the parents should be notified, so that with the proper glasses the poor eye may be improved to such an extent that it will do its part of the work along with the other eye, thus conserving its vision, and perhaps preventing future blindness to this eye. We are told by Dr. Allport that ninety per cent of the dulness in school children is due to physical defects, and that the defects of the eyes, ears, nose, and throat are by far the most common. These can be remedied, and should be looked after as early as possible. I am glad to report that our cities and many of our smaller towns are having an annual routine examination of eyes, ears, nose, throat, teeth, and physical appearance of each child in school. This is a great step in advance, and we should not stop until every school in our state has adopted this method.

In closing, let me say that, as I see it, the future doctor in Tennessee will be a man who is constantly teaching better sanitary conditions in his community. His advice on health problems

of all kinds will be much sought after. He will advocate annual examinations for each school child in his community. He will understand the different causes of blindness, and will always do his best to conserve vision. He will fully realize that the greatest service he can give is to prevent disease, and next to this is to aid nature in curing the disease that already exists. In doing this, he will not lessen his own income, because if he has something that the world wants, he will be paid for it. The community that he lives in will want health; it will need good vision for each of its citizens. He will be most worth while if he endeavors to give both.

SUBPERIOSTEAL ABSCESS OF THE ANTRUM OF HIGHMORE—REPORT OF CASE.*

BY ALEXANDER B. DANCY, M.D.,
Jackson, Tenn.

It is my desire to call your attention briefly to a surgical condition of the superior maxilla, known as "subperiosteal abscess." This surgical disease of the superior maxilla is not given that attention by the rhinologist that its diagnosis demands, for this condition has long been apportioned to the field of the general surgeon and the surgeon dentist.

A general awakening has taken place in the profession in reference to these alveolar conditions, yet I find little in rhinological literature bearing upon this important surgical disease. Alveolar caries are found in every mouth and come more often under the observation of the dentist, since these alveolar caries are almost invariably caused by disease of the tooth pulp. This carious disintegration of the alveolar process is much more common than was once supposed, for in many teeth in which the nerve canals have been partially filled that portion of the nerves left within the canal disintegrates and produces a focus for a pyogenic process. From the apical end of such a tooth septic material passes out through a minute opening, producing an apical abscess, which, in turn, produces extensive necrosis and abscess cavity, with roughened necrotic wall.

The profession is fully aware of the ravages of

this often painless disease. Many patients are now being saved by the intelligent coöperation of the rhinologist and dental surgeon by a positive diagnosis of this important condition of subperiosteal abscess. The rhinologist should be able to interpret radiographs early in these cases of subperiosteal abscess before they rupture into the antrum from pressure necrosis. It is important that the rhinologist recognize these necrotic conditions of the maxilla and be certain of conditions that exist before making exploratory punctures or deciding definitely upon the operation indicated. The surgeon dentists are very energetically pursuing the endomæba with emetin, with slight success. The apical abscesses in a large percentage of cases give pure culture of streptococcus viridens, and in all probability the endomæba is a scavenger bacillus feeding upon the waste from tissue necrosis.

Infections of the superior maxilla that concern us as rhinologists are those affecting the antrum or those infections that will, through neglect, eventually rupture into the antrum. As I have already stated, subperiosteal abscesses are extensions of apical abscesses in the large majority of cases, and these, unless evacuated *per alveolum*, sometimes rupture into the antrum. In the report of my case, the difficulty attendant upon a differential diagnosis between chronic antral suppuration and extra-antral or subperiosteal abscess is apparent.

In the past few years the surgeon dentist has furnished us with a more complete history of these alveolar conditions; and since we know that many alveolar pus cases carry systemic diseases, it is quite imperative that the rhinologist study these conditions more carefully. Osteomyelitis and periostitis result from disturbance or extension of these localized abscesses of the maxilla. Maxillary sinus affections that we have to deal with in the superior maxilla are, in a great majority of instances, due to these extensions from apical abscesses, though in many cases we have infections from other sinuses and from the nares. Subperiosteal abscesses are difficult to diagnose by the ordinary means—i. e., by a puncture through the antro-nasal wall with the trochar, as is usually advised. In these cases we may fail to find a quantity of pus in the antrum, and yet be dealing with an extensive necrosis just outside the thin lining of the antrum; and, again, we may be dealing with an antrum filled with granulation

*Read before Eye, Ear, Nose, and Throat Section of Tennessee State Medical Association at Knoxville, April, 1916.

and polypoid degeneration. In these cases, where we have symptoms of pressure, distension, and neuralgia, and there is doubt as to the condition existing, I would urge a very active effort at diagnosis; and if the antral condition seems persistent and the nasal opening gives no relief, I think we are justified in opening through the canine fossæ that we may make an inspection of the antral cavity.

In reference to symptoms that may be of value as a guide in diagnosing necrosis and a cavity extra-antral, they are vague indeed, as it is a well-known fact that these conditions cause little disturbance, especially if they rupture early into the antrum. These ruptured cases simulate chronic antral suppuration, and we have patients with neuralgia and vacuum antral pain when the normal ostium is closed by rhinitis.

By reporting a single case I can stress more clearly the points in subperiosteal abscess of the antrum.

Mr. W., aged forty-nine, came to me on January 3, 1916, complaining of neuralgia and pressure pains over the right antrum. The patient complained of interference with breathing through the right nostril. He stated at this visit that he had been to see his dentist, as his teeth were sensitive, although he had had the cavities filled a year before. Upon examination of the right nostril, I found a large polyp springing from the middle meatus; and, thinking that a polyp of this size springing from this region meant suppuration and probable necrosis somewhere in the sinus circle that had the opening of their normal ostii here, I snared and twisted the polyp on its pedicle, securing as much of its pedicle as possible. Upon the subsequent visit, I found pus in the middle meatus. Pus showed streptococcus pyogenes associated with squamous epithelium and excess of lymphocytes. Transillumination gave only slightly darkened antrum. Radiographic plate showed antrum only slightly changed from the normal. The patient continued to complain of neuralgia and pressure pains over the antrum, and continued the slight purulent discharge in the middle meatus. I felt justified in making an exploratory puncture through the antro-nasal wall with antral trochar. Much to my surprise, there was no pus in the return flow upon irrigation. Feeling that I had best procure a more definite dental history, I had the patient consult the dentist, who, with my consent, ex-

tracted the tooth he thought entered the antrum, and with a drill enlarged the tooth socket. Upon making an attempt to irrigate the antrum, the patient complained of pain, and suddenly the fluid passed in, with an attendant passage of the fluid out of the normal nasal ostium. Upon probing through the tooth socket, the probe passed into a large cavity, with roughened necrotic wall, which I thought was the floor of the antrum.

Feeling that special radiography of the teeth in situ was necessary, this was done, giving us the plates as seen. [Exhibits plates.] The alveolar abscess and absorption of alveolar process is fairly well interpreted.

With the diagnosis of a subperiosteal abscess, which had now ruptured into the antrum, I determined to do a Caldwell-Luc operation. After removing the anterior wall and with wide exposure of the antral cavity, I found the antrum free from granulations; but upon examination of the floor of the antrum, I found a large necrotic area, which extended downward and absorbed the alveolar process. There was a fistulous opening in the direction of the naso-antral angle so minute that I had not detected it in examining the right nostril. In removing the necrotic area, I found so much of the process gone that we were compelled to remove eight teeth. Removing the anterior portion of the antro-nasal wall, we completed the operation, but were unable to close the canine fossæ opening, as there was so much of the alveolar process destroyed. The patient has been making a slow recovery, but, other than a slight neuritis of the infraorbital nerve, he suffers no pain.

In summarizing, I want to emphasize these important facts:

1. That we should secure more complete dental records in these cases.

2. We, as rhinologists, should study more closely the surgical diseases of the superior maxilla.

3. We should favor the Caldwell-Luc operation in cases in which the radiograph shows necrosis and subperiosteal abscess.

The United States Public Health Service has reduced malaria sixty per cent in some localities.

The death rate from typhoid fever in the United States has been cut in half since 1900.

PROFESSIONAL ETHICS.*

—
 BY C. E. REEVES, M.D.,
 Gainesboro, Tenn.
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The term *professional ethics* is rather hard to exactly define. Every one has at least a smattering idea of what it means. Many of us are like the negro witness who stated that he knew the general character of another negro—that his general character was bad, and that he was not entitled to faith and credit. He was then asked by the lawyer for the opposition the question: "What is general character?" And he replied: "Well, suh, I don't know as I knows ezactly, but I am been told it is cussin' and gittin' drunk and raisin' hell."

The term is so comprehensive that I have not been able to get a satisfactory definition even from the dictionaries. About the best definition I have been able to obtain is that it is "the science that treats of the principles of human morality and duty." It is a kind of moral philosophy. The ethical doctrine is based mainly upon the knowledge that there are other people in the world besides ourselves, and that they have sensibilities and rights and privileges as well as we, and that we owe it to them as well as to ourselves to be affable and considerate and courteous everywhere and at all times.

From a professional standpoint it is quite as difficult to fully define ethics as ever; but, broadly speaking, professional ethics embraces that set of rules or laws which should obtain among gentlemen who are members of any of the learned professions.

It is the set forms, ceremonies, rules, and laws which have gradually, in the process of years, been adopted for the government of the conduct and actions of gentlemen belonging to a given profession.

All of the learned professions, and physicians especially, have by common consent adopted a code of laws, called their "professional" or "ethical" code; and while many of the rules or laws which used to obtain are antiquated and unsuited to physicians of to-day, and while the system is yet far from perfect, yet enough is known and generally accepted by the better class of medical practitioners to constitute medical eth-

ics a distinct modern moral code. It is based upon the highest ideals of morals, politeness, gentility, truthfulness, honesty, and brotherly kindness. Ethics teaches the duties and rights of medical practitioners. It is the science of human duty with respect to physicians and their relationship to each other.

In a general way Christ set the standard of professional as well as social ethics when he ordained that men should no longer be governed by the "iron rule," or the rule of Cain, which declares that might makes right, and that "I am entitled to whatever I can obtain from another," by fraud or force.

Likewise, that men should no longer be governed by the "silver rule," or the rule of Confucius, which teaches that "I am in no wise responsible for the acts and conduct of my fellow-man; that it is my business to attend to my own business and let the other fellow 'paddle his own canoe.' Let him swim if he can; but if he sinks, it is no concern of mine."

But He ordained that men should be governed by the Golden Rule, which teaches that "whatsoever ye would that men should do to you, do ye even so to them."

And the good Samaritan, who bound up the wounds of the man who had been robbed and carried him to the inn and paid his bill, has been the ethical model for these two thousand years. His method of treatment would be considered out of date and antiquated at this time. We are informed that he bound up the wounds and "poured in oil and wine." The modern surgeon would likely have administered the oil to the patient, but in "State-wide" times like these he likely would have taken the wine himself "for his stomach's sake." This Samaritan doctor was evidently not a crank on the subject of sanitary treatment of wounds or of sterilized instruments or antiseptic surgery, and it must be said to his credit that he did not even remove the man's appendix. Necessarily, he is much to be blamed for his failure to perform this indispensable operation; but in view of the fact that he paid the wounded man's hotel bill, we feel disposed to overlook many of his minor faults.

The record does not disclose whether the man recovered or whether the doctor was compelled to file his account with the administrator. These, however, are minor details, about which we are not so much concerned. We are discussing this

*Read at the meeting of the Upper Cumberland Medical Society, Monterey, May, 1916.

Oriental surgeon from a purely ethical standpoint, and our Lord was right when he told the young man, and through him tells us, to "go and do likewise."

Ethics is in many instances overdone. It is drawn out in many instances into finespun distinctions and silly forms and questions.

A doctor is supposed to be neither a snob, a "jellybean," a fop, nor a fool. It may be barely permissible for a young doctor to part his hair in the middle and wear peg-top pants and toothpick shoes, but he will likely learn better by the time he has been caught out in a few storms and swum a few rivers and gone a few trips through the snow and cold to see a sick man whom he supposes owns a good estate, but who, when the bill is presented, quietly informs him that the title to all his property is in the name of his dearly beloved wife. Of course it would be bad form and unethical for a doctor to "cuss" under any circumstances; the most that modern rules allow under any kind of provocation is to use "Chattanooga talk"—that is, when you think "damn it," say "durn it;" and medical ethics don't allow one to go that far if he parts his hair in the middle or smokes a cigarette.

Shakespeare, the best judge of human nature and the finest delineator of human character that the world has ever seen, after setting forth a number of fundamental rules, says:

"This above all: to thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man."

To be ethical, then, is to be true to self. A man cannot be true to himself unless when he meets a brother doctor he can take him by the hand and look him square in the face and have a heart void of offense toward him. He cannot be true to himself if he is envious of the successes of his brother physician. He cannot be true to himself if he neglects to learn every possible thing of value to himself and his patients, even from the very humblest member of the profession. Much less can he be true to himself if he is a slanderer and goes about traducing the fair fame and good name of perhaps some young man who is striving with all his might to keep his head above the waves of opposition and adversity.

Once a young doctor was called in to see a sick man. He examined the man, made his diagnosis, prescribed, and went away. A day or two

afterwards an older physician came, as he said, to pay a social visit to the sick man. He sat around for a while and discussed general topics; then he inquired particularly about the man's illness, and examined him closely, after which he affected a reflective mood for some time; then, turning to the patient, he said: "Let me see your medicine." He held it up to the light, shook the bottle, tasted it, poured some of it out in a spoon, and then, with a face very grave, said to the man: "Let me pour this stuff out." The man, by now frightened out of his wits, readily consented, and he poured it into the fire. Then, with apologies for being unethical in interfering between a physician and his patient, he said: "You and I have been good friends for so long I will give you some medicine that will get you up in a few days." And he filled the bottle with deodorized tincture of opium. The medicine that he poured into the fire was deodorized tincture of opium. When he saw the man in town a few days afterwards, he ran up to him and put his arm about him, and was just awfully glad that he just happened in "in the very nick of time" and saved his life. I believe, gentlemen, that the recording angel takes note of just such damnable conduct as this.

Physicians of to-day are paying more heed and are living nearer up to the ideal than they have ever done before. Just such meetings as this are, and have been, the medium through which doctors are learning to learn from each other; to respect each other more highly; to treat each other more humanely, more justly—in other words, they are learning to be true to themselves.

It has not been long since doctors were a hiss and a byword because of the fact that they hated each other, and were constantly going about trying to prove and convince the people that every other doctor was a quack. We have all seen instances of two boys going through college side by side, knit together by the very strongest ties of friendship. They graduated and came home and located in adjoining neighborhoods, or perhaps in the same town, but it was not six months until those two boys hated each other with a vindictiveness that was startling.

Thank God that the old order of things is passing away; and why is this? One reason is that the doctor of to-day really and truly knows something. Another reason is that he is a student of medical and social ethics. Another rea-

son is that public sentiment is becoming enlightened and is demanding that the physician shall demean himself as a gentleman should.

But the institution that has done more than all others besides to bring about this happy condition is the medical association. Under the refining influences of the association, the doctor is becoming a social animal. To-day he is personally acquainted, or will soon get acquainted, with every physician who is worth knowing within a radius of fifty miles from his home. He has learned, to his very great astonishment, that the laity will find out for themselves who the quacks and back numbers are without being told by a doctor. They are learning that the doctor who doesn't keep abreast of the times and keep in touch with modern medicine is going to be "lost in the shuffle," and that in short order. They have learned the inexorable law of the survival of the fittest. They have learned what was meant by the philosophy which says: "To him that hath shall be given, and from him that hath not shall be taken away even that which he hath."

If you hold your arm in one position for a year, you will never bend it again; and just so if the doctor neglects to resort to constant study for a year, he will never catch up with the procession, but must continue to be a back number.

It is hard to conceive of the moral deformity of the man who could attend one of these meetings and then go away without being influenced for good and without feeling in his innermost consciousness that he is a bigger, broader, better man, and that his capabilities for usefulness have been thereby increased.

"No man liveth unto himself alone." It took the world eighteen centuries to learn the meaning of this declaration, and many people and not a few doctors don't yet know its meaning; but we are coming to the light. The study of professional ethics teaches us that selfishness is sinful and wrong; it teaches men to forget themselves and their own selfish interests and desires and to think and consider that others have rights as well as they, and we owe it to ourselves to live up to the best that is in us.

It has been said, and truthfully, that politeness yields the largest return, according to the amount invested, of any other investment one can make. I believe that a good action is never thrown away, and I am convinced that among doctors it counts for more to be honest and pays better to be mor-

ally clean and genteel, and that it means more to possess good morals and have gentle manners, than with any other class of men. The man who calls himself a "doctor," who does not make a diligent, constant study of ethics and the many matters in which these ethical problems arise in his professional life, lives in the kitchen of his brain, destroys his own usefulness, wrecks his own happiness, and will go to his death unwept, unhonored, and unsung.

Ethics involves not only a moral assent to its rule, but the impression must go deeper, because ethics is moral conduct. It is the force that smooths the rough places of life. It is the oil of gladness, the perfume of social intercourse. Ethics brings a man into harmonious contact with all that is best and all that is worth while. Ethics carries with it power and honor. It stands for goodness and truth. It is the mailed hand that rights every wrong. It cries out when men do wrong and points the accusing finger at the guilty criminal and drags him before the bar of public opinion. It distinguishes a man from a brute. It is, in fact, the voice of the Lord God Omnipotent demanding an answer to the great question: "How are you responding to the claims that your brother has upon you?"

A day scarcely passes that some question involving correct action does not arise. As often as any other way, these questions arise between the doctor and the patient. The doctor who assumes that the great aim to be attained in the practice of medicine is to make money blunders greatly. There are many things in life worth more than money, and among these is one's own self-respect and the approval of one's conscience.

It does not speak well for a physician to be always embroiled in law with his patients. It is possible that a lawsuit may occur without any one being in the wrong, but this is a very uncommon occurrence. Nearly every time one side is in fault, and often both sides. By proper management and the use of a certain amount of diplomacy, the doctor can settle with most of his patients without the least friction; but sometimes a peaceable settlement is impossible. In many instances the patient is to blame. Some men are naturally dishonest, and, unfortunately, the dishonest man sometimes turns out to be a so-called "doctor."

I have often complimented the wisdom of the fellow who wrote:

"The Lord and the doctor all men adore,
When sickness comes if not before
But when the sickness is cured and the illness righted,
The Lord is forgotten and the doctor slighted."

We have all seen the truth of this epigrammatic effusion verified many times over. When the poor man concludes that he is about to croak, he will give everything he has and will promise more; but when he becomes convalescent, avarice seizes his soul and he "*don't think the doctor dun him no good, nohow.*" There are a few such people, and we are all glad that there are but few. They are like the fellow who wrote that

"When the devil got sick, the devil a saint would be;
But when the devil got well, a devil of a saint was he."

We are not, however, looking for perfection in human nature; and one of the very best rules in ethics teaches us to, if possible, overlook and forgive the errors and shortcomings, frailties and weaknesses of the people, remembering at all times that we are not justified in being mean simply because the other fellow is mean.

The physician carries many secrets that the world knows not of, many of which, if he should divulge, would almost turn the world upside down. The doctor cannot in law be compelled to reveal these secrets, and certainly he would be culpable and would deserve the disapproval and the contempt of every right-thinking person if he should so far forget the ethical rule which requires him to carry these secrets locked in his own bosom. If a man can't keep a secret, he has no business becoming a doctor. The physician should be the best man in the community, the preacher not excepted. I don't mean by that that he should be a preacher, but in his daily practice he comes into the homes of the people in such a way that necessarily he must be trusted with the most delicate and most sacred matters. Such a place a scoundrel should not occupy.

Naturally the people will trust some one; they must do so; and we must not by our conduct help to convince them that all men are hypocrites and liars. The world must not lose faith in us. We all know that the man who takes a pill in faith will receive more benefit from it than the one who is satisfied that there is no good either in the doctor or his nostrum. The man does not live who does not trust in some one, who does not believe in some one. It is a serious thing for one to have his confidence shaken and become con-

vinced that he has been deceived. Such things render men cynical and develop them into "free thinkers," infidels, and skeptics.

Doctors, of all other professional men, should be the most fraternal. You ought not to be too busy to walk across the street to meet and shake hands with a brother doctor, and you should not hesitate to tell him all about your latest and strangest case. It may be that he will give you a suggestion that will enable you to be instrumental in saving some person's life. And, then, you ought to go, and he ought to meet you half way, just simply because you are glad—real glad—to see him and because you know that he is real glad to see you. Let's be more fraternal.

The word "clannish" doesn't sound very well, but I would not object to it. In fact, we ought to stand by each other whenever one of our number is being unjustly criticized or persecuted. I don't care if the world knows that I am in sympathy with, and that I am ready to stand up and fight for, the rights of any reputable physician until it is shown that he is really in the wrong or that he has been guilty of unprofessional conduct; and I don't hesitate to say that I have no sort of respect for any man calling himself a "doctor" who will give aid or comfort to some fellow who through prejudice or cupidity undertakes to traduce or destroy a brother physician.

Times change, and men change with them. It used to be thought that the doctor was not at his best except when he was under the influence of liquor. The fact that he would get beastly drunk did not in the least detract from his popularity as a physician. It appears strange to us that such was, or ever could be, the case; but it is true, nevertheless. To-day such a doctor would not be tolerated, and he should not be. Of all the contemptible people in the world, it is the drunken doctor. The lawmakers have enacted that such a doctor should be debarred from practice in Tennessee, and I am glad of it. The people are demanding a higher standard of morals and of qualifications of the doctors, and it is our duty to assist them in this work; and wherever it is ascertained that a doctor has been guilty of unprofessional conduct, we should have committees whose duties it should be to "go after" him and assist the law and the courts to get rid of him.

Ethics among some of the professions has been carried too far. Many of its rules are absurd. They sometimes go so far as to provide that if

two people meet, a certain one shall speak or salute first; that if two people are walking the street, certain ones shall fall back to the rear and allow the great one to go in front; they provide that certain ones shall occupy certain seats at the table, and such like ridiculous things. I believe that one honest man is as good as another, and I will never subscribe to any set of rules which requires me or any one else to bend the knee to any mere man.

We doctors should meet each other upon a plane of exact equality in these meetings as well as elsewhere. But I do not mean to say that we should not honor each other where honor is due. We can do that without compromising and lowering our dignity as men and without any show of hero worship.

I believe that every doctor should be encouraged to do his best under any and all circumstances. If he, by reason of work and superior faculties of mind or heart, outstrips the rest of us in achievement or discovery, let us accord to him the very fullest meed of honor and praise; but in this land of constitutional government, where one of the fundamentals of the law is that all men are created equal, I don't believe in "doffing the hat and bending the pliant knee" to anybody.

There are a number of indispensable prerequisites to the making of a splendid physician. They are honesty, adaptability, industry, and common sense. Of all men in the world, the dishonest man is the most out of place when he is armed with authority to practice medicine. But the industrious man, who, like St. Paul, magnifies his office and goes about his work in a common-sense way, will succeed, unless he so far forgets himself and his great calling as to neglect one of the most important qualifications—professional ethics.

This question presents a wide field indeed. Necessarily, I have touched only a few of the very many phases of this all-important subject; but at last and after all, I am convinced that in the practice of medicine the proper, sensible, and only thing to do is to "add to your faith virtue, and to your virtue knowledge, and to your knowledge temperance, and to your temperance patience, and to patience brotherly kindness, and to brotherly kindness charity."

Unless you cultivate these virtues, you cannot be a physician in the true sense of the word, much less be ethical; and if you will take these

as your motto, just as sure as right is better than wrong, just as sure as strength is better than weakness, as sure as health is better than sickness, as sure as joy is better than sorrow, just so sure will your success follow, and just so sure will your name stand as a synonym for probity and honor and efficiency.

IMMOBILIZATION IN THE TREATMENT OF INJURIES TO THE FINGERS AND TOES.

BY J. W. HANDLY, M.D.,
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Injuries to the fingers and toes are the most frequent of our personal-injury cases; and as the loss of these members are so serious to corporation and railroad employees, a few words as to the best way to handle these cases in order to obtain the most serviceable members is most appropriate.

Time is always a valuable asset with these men, depending on their daily earnings for support; so the minimum time in bringing about a cure should be one object, while saving as much as possible of the hand, fingers, or toes should be another, looking carefully and cautiously to both.

Unfortunately, these injuries are too often considered trivial and are treated by home remedies for a few days before coming to the company surgeon, who is then confronted with what might have been prevented if seen early—namely, infection.

When these injuries occur, the employee's hands, fingers, and toes are usually covered with grime, dirt, or other agents which would bring about infection. Pieces of socks, gloves, or cloth saturated with all kinds of microorganisms are driven into the lacerated parts.

Next worse that is done, some sympathetic friend comes with some dirty water in a dirty pan, with unsterile cloths or cotton, and washes away the blood, nature's protection, and incidentally washes the infection from without directly into the wounds. They don't mean to do harm, but they do so.

Comparatively trivial injuries can be quickly turned into serious conditions by the treatment administered above. Employees of public-service corporations should be instructed by their sur-

geons along the line of first-aid dressings. Fortunately for the injured employees, nearly all railroad corporations, machine shops, and other employers of perilous occupations, are now devoting time and efforts to guard against complications that may arise from injuries sustained by their employees. First-aid packets should be available for emergency work. Much time and suffering can be avoided by their proper application by the person who first sees the injured.

I have a report of forty-five cases treated at our shops by unskilled hands using first-aid dressings now installed at our shops and on cabooses and baggage cars, showing that no time was lost by forty of the men and only five were sent to the company's surgeon for further treatment. One or two men at the shops were instructed by me as to the means to be employed in administering first surgical treatment.

If iodine and alcohol can be obtained, it should be used freely, pouring all over hand or feet into the lacerations. Hemorrhage should be controlled by pressure or an improvised tourniquet. As soon as the case reaches the surgeon, the injured parts should be inspected, cleansed (with benzine and iodine 1-1000), later bathed with alcohol and 15 per cent tincture of iodine, thoroughly and carefully applied to all the affected and surrounding parts. Nothing so completely and quickly combats infection as iodine; nothing will so quickly destroy the infection after it appears. No injury can be inflicted by its use; but, on the contrary, much good can be obtained.

The surgeon with gloved hands should carefully remove all splintered bones, cut off protruding spiculæ, lacerated tendons and nerves, trim ragged skin, and endeavor to approximate the flaps without undue tension. We must save as much finger or toe as possible, but not forget that these contused and lacerated members are greatly liable to slough, and any undue tension of flaps makes them more liable. Their nutrition is impaired. We can never know how or what infections may be lurking in some place we have not touched, to multiply as days go by and infect the whole area if not extend along the line of tendons to parts remote to add to the already existing affliction.

Now to the real point in this paper. I wish to emphasize the use of the proper splints to immobilize the hand or foot and keep it so until all danger of extension of the infection has passed

away. I verily believe that this is one of the most important points in the care of these injuries, and that many cases are brought to a hasty recovery by this procedure which might have terminated otherwise had the proper splint not been applied. Silk-worm retention sutures are least irritating and should be used.

Where there has been much laceration, rubber tissue, cigarette drainage, or rubber tubing should be used for one or two days to insure drainage and good results. Where the late surgical technic is employed, pus is rarely seen, except possibly a small pocket here or there, and this is quickly dispelled by iodine.

The after dressing should be as carefully attended to as the first operation. No water should be used. Cleanse with alcohol, 50 per cent, and apply tincture of iodine. Remove sutures on fifth or seventh day—sooner if indicated by pain, swelling, redness, or pus; these are indications for attention from the surgeon.

There are several important points to be borne in mind.

1. Injuries to fingers and toes look much worse and more extensive than they really are.

2. The damage sustained and our ability to repair the same is comparatively easy in contrast to other injuries.

3. Tension of sutures or ligatures impairs vitality and invites microorganisms.

4. Drainage is essential in order that the products of repair may be thrown off.

5. Successful amputation can be done without going well above the apparently damaged areas, thereby saving a part of the member which will be valuable in future labor.

6. Immobility of the afflicted members may prevent extension of infection to contiguous or distant parts, thereby preventing lymphatic involvements.

7. An immunizing antitetanic serum 15 cc. is always a safe insurance against tetanus.

In the control of hemorrhage in infected lacerated wounds, use as few ligatures as is feasible. Coaptation of the flaps with even slight pressure will control the capillary hemorrhage. With infection present, the ligatures are almost sure to give trouble, and, if silk is used, will have to be removed.

Again let me emphasize complete immobilization. The experience of many railroad surgeons corroborates my advice.

To the finger, a board extending from finger tips to near the elbow on flexor side of forearm.

For the toes, a perforated metal gutter splint, embracing the heel and foot and extending to the knee, securely fixed with adhesive and cotton bandage. In either case, if the injury is severe, the patient should be placed in bed for a few days, afterwards kept quiet until no evidence of extending infection is shown. In case healing is delayed, the general condition of the patient must be looked into. In fact, we should always look into his constitutional condition in the beginning to assure ourselves that his ability to resist infection is good.

In closing, let me summarize:

1. Control hemorrhage.
2. Cleanse wounds with alcohol and benzine and sterilize with tincture of iodine.
3. Remove all detached fragments of bone and soft tissues that would be liable to slough and cause trouble otherwise.
4. Proper coaptation of surfaces and proper tension of sutures.
5. Drainage if indicated.
6. Dressing and immobilization.

I might bring to your attention a number of cases coming under my observation during the past two years, but a recital of them would be a repetition of the foregoing remarks.

CONSTIPATION.*

BY B. F. FYKE, M.D.,
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Constipation is one of the most common ailments of the American people. It is no respecter of persons; it is found in the old and young, the rich and the poor, the man behind the counter and the man on the farm; the jurist, minister, and teacher has it; it is confined to no geographical section; it is found in the North, South, East, and West.

None of the above-named people would allow the plumbing or sewage of their homes to be defective for any length of time without an effort to have it corrected; yet they will allow their alimentary canal to be obstructed for days and days with no alarm about themselves.

People of sedentary habits are more prone to be constipated than those of an active and out-

of-door life and employment. The greater percentage of constipated people is found among women.

In defining the ailment, it is immaterial about the term used. "Constipation," "costiveness," "fecal stasis," "intestinal stasis," "intestinal atony," all convey the same idea. It is a failure on the part of the alimentary canal to be daily emptied of its contents. As to the number of movements that should occur daily to be normal, is immaterial, as some people have only one movement a day and are normal, while others have two, and feel an indisposition if they fail to have two regular bowel movements.

Constipation is not always the result of a habit of neglect or carelessness on the part of the patient to have a daily bowel movement. I believe some people have an innate predisposition to constipation. Some babies are born with the ailment and never have an action from the bowels unaided, and sometimes this must be mechanical, too. Mere suggestions by titillating the anus do not answer.

If it is not an innate predisposition, why should the nursing infant become constipated? It knows nothing about neglect and resisting the calls of nature for a fecal evacuation; and why should the man on the farm be constipated? I am not talking about the man of leisure on the farm, but the one that gets out of bed and is in his barn by four o'clock in the morning, eats his breakfast by the lamplight, and is out in the field by sun-up—evidently he has ample time to evacuate his bowels, but we find them constipated. Again, a thorough examination of the man on the farm that is constipated frequently gives a history of having the ailment from his boyhood, from his boyhood to childhood.

The habit, if it is a habit, is formed very insidiously and unconsciously sometimes, and in some people in this way: They go to stool early in the morning and have, as they believe, a full movement from the bowels; and in the course of two or three hours they feel an inclination to go to stool again; but if they are busy and it is inconvenient for them to go at that time, the desire will pass off and they go until the next morning, when they notice that the first portion is inclined to be hard and somewhat difficult to expel; and if this occurs many days, the temptation to take a laxative is very strong; and if it is taken and the difficulty removed, one ste

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toward the formation of the habit is made of taking purgative medicines, and this is the bane of all habits with the American people.

The habit begins in another way: A man, after eating a very large meal, a great deal of which is indigestible, feels very uncomfortable and has some distressing symptoms. His heart palpitates; he has shortness of breath; his head hurts and he grows sick at his stomach; his back and shoulders hurt him; about midnight he sends for a doctor to come in a hurry; the doctor goes and gives him a very active purgative, and the entire alimentary tract is cleaned out, and he is normal in a few more hours. In his hurry he soon forgets this lesson, and it is not long until he has another "spell," and he sends for the same doctor, and the same prescription is repeated, with the same rapid relief to the patient.

This procedure does not go far until the patient supplies himself with a quantity of the purgative as given by the doctor; and with the return of the next attack, he is his own physician, securing the same relief; and then a long step is taken toward the formation of a habit of chronic constipation in this man, and it is not long until we find him stocked with a supply of "Lane's Pills," "Early Risers," "Little Soldiers," "Get There Quick," etc.

The habit is a result of the frequent irritation of the mucosa of the intestines by the self-medication of the patient with either the patent or proprietary preparations he uses.

The habit is also formed in the rapid eater—one who does not take time to thoroughly masticate his food. It is bolted down in a very imperfect state for digestion; but little saliva is permitted to be mixed with the food, and it is washed down with some liquid that dilutes the gastric juice, materially retarding the work to be done in the stomach in preparing its contents for the small intestines; and if there should be much insoluble matter in the contents, some of it will necessarily pass into the large intestines still solid and have a tendency to be arrested at some of its curvatures and become a nucleus for a larger mass. Why should such particles not be held in the cecum, hepatic, splenic, and sigmoid flexures of the colon long enough to become a mass of considerable size and very difficult to remove by the normal peristalsis of the bowel?

It is in conditions like this when a patient can have a daily bowel movement, or a diarrhœa, and

still be constipated; even the rectum can be almost obstructed with a hardened fecal mass, and still the patient does not think he is constipated.

The habit can also result from the use of food that is too easily digested and assimilated, not leaving enough residue to form a fecal mass large enough to be kept in motion by the peristaltic movements, and it soon becomes hard and dry, assuming the shape of small balls. This is found in some people who consume a great deal of beef and milk and in infants whose mother's milk is easily digested. Children thus troubled with constipation are usually well developed and seemingly healthy children as contrasted with those who have a diarrhœa and in which are found lumps of undigested milk.

The symptoms of constipation as given by a patient suffering from constipation are so many that the laity and a few of the medical profession designate the complaint as "biliousness," and we all seem to understand what is meant by the term. I long to see the day come when doctors will quit using the term "biliousness." We should study their symptoms and give a diagnosis in ethical medical terms. The druggist can make a diagnosis of "biliousness" and prescribe as intelligently as the physician that prescribes without making a thorough examination of the patient for a diagnosis.

We Americans are very gullible, and the patent-medicine and proprietary manufacturers have an easy way with quite a number of our otherwise reputable physicians in getting their products for constipation before the laity. The druggists are not sleeping on their "jobs," and take advantage of every prescription given for constipation that is in the list of proprietary preparations for it.

Many cases of constipation exist that would not if the first doctor consulted had gone thoroughly into the cause of the beginning of the ailment, removed it scientifically, then kept an oversight of his patient until the habit had been broken up; and especially does this apply to those who seem to have lost tonicity in both the intestines and abdominal wall, or who do not take enough time for the tract to be thoroughly evacuated.

A few years ago a man came to me complaining of a severe pain in the anus when he had a bowel movement, and still he was not then relieved of the pain; he gave a negative history of

constipation; had, as he thought, a free bowel movement every day until the pain became so severe that he postponed the act as long as possible. A digital examination detected a very sharp and hard substance low down in the rectum. On removing it, it proved to be a sharp and flattened enterolith. He suggested that it was a piece of rib he swallowed a few days before, and it did look like it, and was nearly as hard as a bone. This was not all of the dry and hard fecal lumps that passed, but it was the sharpest one. The habit was easily broken up. The fault with this man was his hurry. He did not take time to defecate, so he had a small amount of fecal matter left in the rectum frequently, and it soon became hard and dry.

Another fault with the American people is in regard to the habit of drinking while eating. Some drink entirely too much, while others do not drink enough, unless they are willing to take time enough to chew their food until it is in an impalpable state and ready to be acted upon by the gastric juice, the pancreatic juice, and the bile, if it has any part to play in digestion and assimilation.

The treatment of constipation is very unsatisfactory, both to the patient and to the doctor, so far as results are considered. If any degree of success is to be attained by treatment, it means a complete change in the mode of living. The sedentary subjects must begin to get up earlier, have more regular hours for eating and sleeping, take more outdoor exercise and recreation, have a fixed time to go to stool (this should be at a certain hour and minute—say, 7:10 A.M.—and go at that time, and not 7 or 7:30). All the logic there is in the rule is to have something definite in view and live up to it without any departure either way.

The rapid eater must be impressed with the importance of masticating his food thoroughly; take time to eat and allow nothing to disturb him while eating; if he is called to the telephone two or three times while eating, he will soon forget this rule and begin bolting his food again.

It will be necessary for a change to be made in the composition of the meals. More vegetables must be eaten; fruits of various kinds must enter into the meals and between meals; if the rule is to drink a great deal of water while eating, this must be changed and drink less water and all other liquids while taking the meal; if the

food is concentrated and easily digested, leaving but little residue, food that is coarse and having some waste matter in it must be combined; whole-wheat flour and coarse corn meal make good additions.

Another difficult condition in the treatment of constipation is breaking up the habit of self-medication. By the time a patient realizes that his condition is such that he needs the assistance of a doctor in dealing with constipation, he is far advanced in the use of patent, proprietary, and other household medicines; and quite a few of them are well acquainted with the use of the fountain syringe in taking hot-water enemas. It is almost impossible to convince them of the error of their treatment, because it had its beginning with the suggestions and prescriptions of some doctor. I know men who keep a supply of purgative pills on hand all the time and take from one to three every night, and I could stop a cyclone nearly as easy as I could get them to break up the habit.

After the bowels have been thoroughly evacuated by the use of a calomel purge and castor oil, some preparation of nux vomica, cascara, gentian, and bella donna in varying combinations embraces about all the drugs necessary in treating constipation. A glycerine suppository inserted in the rectum at bedtime produces good results for a while. I have had but little experience with Russian oil in treating constipation but my observation from a limited experience with it leads me to believe that the results are about the same as with all other laxatives. The effects are good for a while; but if the patient depends on the oil alone for bowel movements an increase in the size of the dose will soon be necessary, just as occurs with all other remedies resorted to for relief. There is one consolation for all doctors: We will always have the constipated with us, do what we may, teach what we may with a view of breaking up the habit.

DISCUSSION ON THE PAPER OF DR. FYKE.

DR. WILLIAM BRITT BURNS, Memphis: This is a very popular disease, if we may so speak of it; for all kinds of practitioners and medical treatment have been very inefficient. Like a diseases or ailments which have a multiplicity of

remedies, it gives us a striking evidence of a condition that is hard to control.

The essayist spoke of the necessity of proper dieting and eating at the proper time to guard against constipation. I did not hear him say anything about the necessity of caring for the outlet of the bowel itself. A man who is constipated from time to time will accumulate in the lower bowel large, hard masses, and these masses will stretch and cut the sphincter muscle. The slightest little tear in the sphincter muscle will set up a sufficient amount of irritation to make the sphincter contract when anything comes down upon it. The function of the sphincter muscle is to dilate when the impulse comes to empty the bowel. When you have an irritable sphincter muscle (and you will find it in a very large percentage of these cases), when the bolus comes down upon the irritable sphincter, it contracts instead of opening. You have a three-cornered and flat ribbonlike stool that passes the irritable sphincter.

I have been in the habit for a long time—and I learned this by experience when a medical student, because I had constipation from the time I was fifteen until I was about nineteen—of using a speculum and dilating the sphincter muscle once or twice, sometimes three times, a week for half a dozen times, and very frequently these cases are entirely cured. It has been satisfactory in my practice, and I would recommend it to you as one of the best methods of treating constipation.

I was studying under an old-fashioned preceptor, and on one occasion I passed a little blood and mucus, and I got my preceptor to examine the rectum to see what the trouble was, and, in order to see, he passed a good-sized speculum. I had no more constipation, and I have not had since. The method simply consists in dilating the sphincter, breaking up the irritable fibers and putting them on a stretch every time and overcoming the condition in that way.

The membership of the Tennessee State Medical Association has reached a new high record. There are now 1,530 members. Let's make it 2,000. Make yourself a committee of one to get one more good man in.

Poor health is expensive.

SUICIDE.*

BY JOHN W. STEVENS, M.D.,
Nashville, Tenn.

Suicide has attracted the attention of men since earliest antiquity, and I feel fully justified in presenting the subject before this body of medical men because of the fact that, as a cause of death, it occupies so prominent a place. The United States mortuary statistics for 1910 showed deaths from suicide in the proportion of 16.5 per 100,000 population, thus giving approximately 14,000 suicides for that year. Statistics compiled since then by insurance companies show that the rate of deaths from this cause has considerably increased during the past five years. This increase of rate, together with the increase of population, permit, as a very conservative estimate, the statement that there will be at least 18,000 suicides in the United States during the year 1916. That which produces 18,000 deaths per year in our country is worthy of a little consideration and discussion, even if that discussion do nothing more, for the time, than merely bring the matter forcibly to our attention.

HISTORICAL.

From the very dawn of history we find that, as a result of various and sundry causes, occasionally men took their own lives. Some of the earlier religions viewed it with complacency, or even encouraged it, especially among the Orientals. Manifestations of such a spirit are, perhaps, to be seen in human sacrifices to Moloch, Bel, Chemosh, and of other gods of the early Semitic tribes, as well as in the sacrifices to the Nile practiced by the early Egyptians. The victims of these dreadful ceremonies were not always unwilling ones. In a nearer historical epoch the Greeks viewed the act with more or less abhorrence in the earlier days of their civilization, according dishonorable burial to the corpse, though later they became more complacent. Among the Romans, suicide, even from their early history, was not uncommon; and at the period marking the first ebb of the power and glory of that nation, self-destruction became exceedingly common. History records this as hav-

*Read at the meeting of the Middle Tennessee Medical Association, Lewisburg, May, 1916.

ing been the end of many a great Roman thwarted in his ambition or falling under the displeasure of the powers that were. Of the triumphs, Brutus and Cassius suicided upon the field of battle rather than fall into the hands of victorious Octavius. Under similar circumstances Mark Antony slew himself, as did his famous royal mistress, Cleopatra. The Justinian code recognized seven legitimate reasons for suicide, ranging from madness to mere *tedium vitæ*, and only confiscated the victim's property when the act was committed to escape punishment for some great crime against the state. Christianity, from the very beginning, condemned the act and classed it with other murders. To that greatest of the fathers, St. Augustine, it was one of the direst of sins, and so pronounced by several church councils after the fifth century. The corpse was denied the ordinary rites of the church at its burial. In mediæval times the law customarily confiscated the property of the suicide, and religious teaching and custom coming more and more to reprobate the act, the corpse was frequently treated with the greatest indignity. Thus, in France, it was the custom to drag the body by the heels, face downward; while in England burial took place at a crossroads, with a stake driven through the body. It was not until 1823 that an English statute was enacted legalizing the burial of suicides in consecrated ground, and not until 1882 that religious services were expressly permitted by the law. The Catholic Church to-day always, and the Episcopal Church as a rule, excludes suicides from burial in consecrated ground. While this was the general teaching and tendency of the church and custom, it seems to have been true that, especially from the sixteenth century, the rigorous rules were sometimes relaxed, permitting some very restricted religious ceremonies at burial, as in the case of those in whom it was recognized the act was one resulting from madness. It was not until 1870 that the English law requiring confiscation of the estates of suicides was repealed, though frequently before that the statute was evaded on the grounds of lunacy. The whole subject, no doubt, offered a fertile field for strange arguments and hairsplitting technicalities that characterized certain periods. One humorous example of this is reported by Plowden and published in 1578. The case in point was that of Sir James Hales, who had destroyed himself,

whereupon action was brought seeking forfeit of a crown lease held by Hales. It would seem that the verdict was for the crown, and reached upon the following learned argument of the judge: "Sir James Hales was dead; and how came he to his death? It may be answered: By drowning. And who drowned him? Sir James Hales. And when did he drown him? In his lifetime. So that James Hales, being alive, caused James Hales to die; and the act of the living man was the death of the dead man. And then for this offense it is reasonable to punish the living man who committed the offense, and not the dead man. But how can he be said to be punished alive when the punishment comes after his death? Sir, this can be done no other way but by divesting out of him, from the time of the act done in his life which was the cause of his death, the title and property of those things which he had in his lifetime."

In certain states of the American Union attempted suicide by a sane person is punishable. In France suicide is not recognized as a crime at law. In Japan it may almost be said to be a social usage under certain conditions, as witness the prominent example of a certain prince who, with his wife, suicided after the death of the late emperor as a mark of honor and respect to the dead monarch. We are all more or less familiar with the Japanese custom of suicide, under the name of "*hara-kiri*," committed by soldiers in battle rather than surrender when defeated.

As a matter of present-day occurrence, there are a great many factors to be taken into consideration in any contemplation of this subject. As a body of medical men, we are most interested in it as a manifestation of mental disease; but I consider it an untenable position to take that every instance of suicide, or its attempt, should be looked upon as *prima facie* evidence of insanity. At any rate, such may not be done as a medico-legal proposition. While we recognize that the desire for self-preservation is one of the fundamental and strongest instincts implanted in the lower animals, as well as in man, yet the subordination of this instinct to other instincts, motives, and impulses is a matter of daily observation. The sacrifice of her life which the brute mother makes to save her young, or the battle to the death by the male contestants for the leadership of the herd, shows that even the dumb beasts of the field may value some things more

highly than their own individual lives; while the countless acts of man's heroism and self-sacrifice for the weak, unfortunate, or at patriotism's call demonstrate that, under certain conditions, man's desire to preserve his own life may become a motive of most secondary importance. The man who fires a bullet into his own brain rather than face the shame of dishonor and degradation is less altruistic, but may be no more insane than the man who charges a machine gun to what he knows to be certain death. Civilized man, with his highly developed sensibilities, may, in all sanity, prefer death, self-inflicted, to many other alternatives, the force of which is not taken away, even though we hold that suicide is a cowardly way of meeting one's responsibilities or solving one's difficulties. We know, of course, that a large percentage of suicide is but a plain manifestation of a well-established mental disease, of insanity—a percentage probably much higher than the collected statistics would show; and, again, in many other instances, that the act is an expression of a morbid emotional state and ill judgment into which the individual has permitted himself to be plunged by misfortune, disappointment, reverses, sorrow, or an aching conscience—a condition not to be looked upon as a mental disorder, except in the most academic sense of the term, and certainly not as a disease at all; but the many observed circumstances concerning the subject of suicide as a whole force the conclusion that the deed is often to be viewed as the calculated, deliberate act of a man in full possession of his faculties.

A great mass of statistics upon the subject of suicide has been collected by the Federal Government and published in its census reports, by insurance companies, newspapers, and others. While these are of interest to one making an exhaustive study of the subject, their repetition and recitation here would be tiresome. Some discussion of these figures in a general way, however, will be pertinent.

In the first place, time and geographical distribution attract our attention. The statistics of all countries show a marked increase in the suicide rate as time goes on—as, for instance, in France the rate per 100,000 population has risen from 9 in 1840 to about 24 in 1910. The statistics of other countries show a similar increase, though by no means always in the same proportion. It is stated that, in this country, for the *registration*

area, the rate per 100,000 population from 1893 to 1897 was 15.7, while from 1908 to 1912 it was 20.2. A tremendous difference exists in the rate in different countries—as, for instance, for 1910 the records show its occurrence in the following numbers per 100,000 population:

Prussia	20.7
France	23.8
Switzerland	22.8
Denmark	22
England	9
Norway	5.5
Ireland	2.9
Spain	2

In the United States it is found that the act is vastly more common in certain sections than it is in others. It is most common in the West and Middle West; next in point of frequency, in the Eastern and Atlantic states; and least frequent of all, in the South. For instance, we find that for 1913 the following was its rate of occurrence per 100,000 population in the few cities to be mentioned in these various sections:

San Diego, Cal.	47.7
San Francisco, Cal.	45.1
Los Angeles, Cal.	30.5
Indianapolis, Ind.	30
St. Louis, Mo.	32.9
Chicago, Ill.	21.3
Newark, N. J.	17.4
Hartford, Conn.	15.3
Manhattan and the Bronx.....	17.8
Boston, Mass.	13.1
Brooklyn, N. Y.	9.8
Nashville, Tenn.	21.8
Charleston, S. C.	11.7
Augusta, Ga.	14.5

Again, it is found that in the rural districts of the sections adjoining the cities mentioned the percentage of occurrence is noticeably less than in the cities themselves. To my mind, nothing beyond these figures is necessary to prove that there are many other factors than mental disease at work to bring about suicide, for certainly there is no such variation in the incidence of insanity in these different sections.

Without undertaking to quote the figures, I may say that it is the conclusion of all the statisticians that suicide occurs more frequently in the summer months than in the winter, the rate being highest in May and June and the lowest in December and January; that it is more frequent in the beginning of the week or the beginning of

the month than in the other parts of those divisions of time. Race, religion, and vocation greatly influence its occurrence. Of all the races in this country, it is lowest among the Jews and less among negroes than whites. It is much less frequent among the Roman Catholics than among members of Protestant denominations. The professions and vocations show a great variation in the percentage of incidence, with ministers lowest on the list. The United States mortality statistics for 1909, showing the cause of death of males, classified according to occupation and based upon a total of 210,507 deaths, showed suicide to be the cause of death in the respective professions and vocations in the following percentages:

Clergymen	.2%
Teachers and professors in colleges ..	1.2%
Miners and quarrymen	1.5%
Steam railroad employees	1.5%
Blacksmiths	2.0%
Unclassified laborers	2.0%
Physicians and surgeons	2.2%
Lawyers	2.3%
Bakers	4.5%
Salesmen	4.9%
Commercial travelers	5.0%
Saloon keepers	5.0%

Here, again, is further proof that mental disease is not the sole cause.

It is much more frequent among males than females, and more frequent among the unmarried than married, and, again, much more frequent among widowers and widows than among those who have never been married at all. Age is a very important factor, the greatest number occurring probably between the ages of twenty and thirty, because of the greater number of persons in the country of that age; but as the life of the individual advances, the probability of suicide is very greatly enhanced. It has been estimated, as nearly as accuracy can be attained in such a matter, that about one case of suicide in three is due to mental disease.

The point in this whole question about which we are most concerned practically is that of the prevention of suicide—a thing that we may hope to do only in the case of those who are mentally unbalanced. Necessarily, it is not practicable for a medical man to exercise any influence over those potential cases arising from other causes. Two exceptions to this statement might be noted.

First, in cases of alcoholism, in whom there is sometimes a suicidal impulse when the individual is sobering up from his debauch. The occurrence of suicidal attempts, under these circumstances, is, of course, comparatively infrequent; but it is a thought to be borne in mind in managing these patients, and in one in whom remorse is at all a prominent feature, some unhappy occurrences may be avoided by the close watching of those patients. The other exception would be that it behooves us, as medical men, to bring about an educational propaganda to effect a reform in the custom of the newspapers of giving such notoriety to the occurrence of suicide and the method used in accomplishing the act. That this sort of notoriety does have a powerful influence is readily recognized by any one who has given any attention to the subject. Just now there is an epidemic, which we may hope has reached its crest, of suicide from bichloride of mercury. A year or so ago a great deal of prominence was given to the case of a banker in one of our Southern states who inadvertently took bichloride of mercury, which ultimately caused his death. A lot of pseudo-medical reports were given in the public press about this case, which was played up for far more than it was worth as a news item, because of the fact that the man was said to have been conscious for several days following the taking of the drug before he died, and a lot of morbid stuff was published about what he said and did during this time. I think all of my hearers bear me out in the statement that before this suicide by means of this drug was rare, whereas now it is very popular. I remember that while living in New York, twelve or fourteen years ago, an account was one day published of a man leaping from a window on the top floor of a skyscraper. Prominent accounts were given of this occurrence, with descriptions of how the man secured entrance to the room from which he leaped, of the effect of the fall upon his body, etc. Within the next week or ten days there were, perhaps, half a dozen similar occurrences. Accounts such as these have much to do with the methods selected, as well as by suggesting the act; and we know how the custom has shifted from taking strychnine, arsenic, and morphine to the present-day more popular ones of carbolic acid and bichloride of mercury. It would be infinitely better for the public welfare if accounts of suicide were not published at all, and certainly that the

means and methods should not be given prominence.

In dealing with mental disorders, the only safe course to pursue is to consider every case a potential suicide. It is in the developmental stages of psychoses that the question of the prevention of suicide is most practical, since it is at this time that the individual is least apt to be under close supervision. Repeating the statement that every case of mental disturbance should be thought of as possibly suicidal, the greatest emphasis needs to be laid upon the fact that every such patient whose mental state is one of depression and dependency is especially to be considered as suicidal. Practically every patient in such a state of mind sooner or later entertains the thought of self-destruction. He does not necessarily express such a thought, and we will suffer many shocks if we wait for these patients to tell us of such ideas or make some attempt upon themselves before taking the necessary precautions to guard and protect them. The precaution to be taken might be summed up in the phrase, "unremitting and constant watching." The details and application of this are manifold, and carry with it the thought that the patient must be not only under constant supervision, but under surroundings not offering the means for self-injury. In the case of a patient at all actively inclined toward self-destruction, proper protection can rarely ever be afforded elsewhere than in an institution. The multiplicity of means adopted, the suddenness with which attempts may be made, or the cunningness with which plans may be evolved and executed for the accomplishment of the act, make it next to impossible to afford effective protection in the home. Even in the best-regulated private hospitals or public hospitals for the insane, absolute and 100-per-cent protection against serious self-injury or destruction is not always possible; and if such must be admitted under surroundings afforded by the systematic watching and supervision of nurses and attendants trained in the care of such patients, and where the best precautions that human nature affords are taken to keep from the patient things which he might use or drugs which he might take to injure himself, sometimes prove unavailing or suffer lapses, how much more must this be true where firearms are frequently available, sharp instruments practically always so, ropes and strings at hand, unbarred windows to menace, and the possibility of

escape to bodies of water, railroads tracks, etc., constantly to be feared? I have known at least one deplorable incident of a lady, a former patient of mine, who, after removal from the institution to her home, set fire to her clothing with a match, while her brother was sleeping in her room with her, and died from the burns resulting. Not to mention the multitude of methods which these patients may attempt for their injury, I may mention two which, under no circumstances at all, either without or within an institution, may be kept at all times away from the patient. These are the dashing of oneself against the wall or other object, and the means for strangling or hanging oneself. Articles of clothing or bedding always furnish the latter, and the fear of such use of these things is a source of everlasting anxiety to those having charge of these patients. Opening one's veins with a needle, pin, or piece of broken water glass or electric-light globe are possibilities. The possession of the means with which to accomplish this is exceedingly difficult to prevent. To always keep from such patients foreign bodies which may be swallowed with suicidal attempt is impossible; and while such occurrences are infrequent, yet I knew one patient who swallowed the handle of a teaspoon, a part of a fork, and the handle which he had removed from a water faucet. Finally, when he attempted to swallow a tablespoon, his proclivities were discovered.

When in an action at law a plea of insanity is entered, based upon the act of suicide or its attempt, the suicidal act in itself is not alone sufficient proof of insanity. Other evidence in the person's manner, conduct, or utterances indicative of mental disorder must be adduced to sustain such a plea.

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Devoted to the Interests of the Medical Profession of Tennessee

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EDITORIALS

TENNESSEE PREPAREDNESS.

Fifteen thousand persons marched through the streets of Nashville on Saturday, June 3, and many thousands marched in other towns and cities of Tennessee, to demonstrate their strong belief in the policy of national preparedness, and, supposedly, to indicate their willingness to do what is necessary to put this great land of ours in a state of preparedness for whatever may come as the result of these world-changing times through which we are now passing. We watched the marching thousands and wondered—wondered how many of them knew or really cared just what is involved in preparedness.

In all the discussion that has been waged throughout the land and on nearly all the banners displayed in preparedness parades, battleships, forts, guns, aeroplanes, munitions, and the *size* of our army have been the matters uppermost in the minds of the talkers and writers and the makers of the banners. Little has been said and precious little thought has been given, apparently, to the human side of preparedness—to the matter of defending the health and lives of those upon whom must rest the burden of toil necessary for the building of forts and ships and flying craft and those who must be depended upon to man the ships, garrison the forts, and bear arms when war shall come. No nation will ever be really prepared for successful resistance in war, nor for forging ahead to place of supremacy in times of peace, unless the component states or provinces of such nation shall do each their part; no state will have done its part toward the nation's preparedness until it shall have made the conservation of health and life the supreme object.

Is Tennessee prepared from the standpoint of the health of its people?

Did the 1,200 babies who died in Tennessee in

1915 from infantile diarrhœa die in spite of Tennessee's preparedness to safeguard health and life, or because of her lack of preparedness? Is Tennessee's 1915 record of 4,500 deaths from tuberculosis, with a probable 150,000 or more infected persons, many of whom will die from tuberculosis, a good argument in favor of her belief in the policy of preparedness? Does the certain fact that another 4,500 will die in 1916 from the same dread disease, partially because the state is doing practically nothing for the prevention of tuberculosis, show Tennessee prepared to measure up to the standard of a modern progressive state, willing to do her part toward national preparedness? Is Tennessee ready, or does she really believe in getting ready, when she allows, as in 1915, about 1,000 of her citizens to die with typhoid fever? Or as long as she permits thousands of her people to be made inefficient by the pernicious effects of another widespread preventable disease—malaria? Can Tennessee distort the record of from twenty to more than sixty per cent of the rural school children in numerous counties with hookworm disease (about which many of the physicians in those counties are doing nothing) into an argument favorable to her pretended belief in preparedness? Do the nearly 900 recorded deaths in 1915 from pellagra and the prevalence of this disease at the present season entitle Tennessee to any very advanced position in the preparedness column? Does Tennessee's lack of facilities for training children who are mentally defective indicate any very real interest in preparedness? Is Tennessee as enthusiastically in favor of preparedness as the long lines of marchers in recent parades would seem to indicate, when her cities allow themselves to be advertised to the world as the leaders in high death rates from preventable disease? Will Tennessee ever be able to make a half decent show of preparedness to compete with other states as long as none but one of all the states provide less money than she to be used in fighting preventable disease? Or as long as obsolete law, no law, and lack of regard for law intended to operate for the benefit of health conservation are allowed to be the order of the day?

The truth is (God help her) that Tennessee is prepared—fully prepared—to continue her poor record with respect to widespread health-destroying and life-destroying disease which might be prevented to a large extent if the state would d

er simple duty. Thousands of her rural homes, without privies, without screened kitchens and living quarters, and with polluted wells and springs, are prepared to continue to send their babies dead of infantile diarrhoea to the graveyards; to furnish victims in plenty for the pernicious typhoid bacillus; to send their children, retarded in physical and mental development because of hookworm disease, into poorly located and insanitary schoolhouses. Our unsewered and unsanitated towns and cities are prepared to furnish their full share of conditions favorable to the continuance of Tennessee's pitiable record of sickness and death from soil-, water-, and insect-borne disease. Tennessee's cities—and her rural districts, too, for that matter—are abundantly supplied with slums, plenteous in number, large in area, and rich in the infections which tuberculize and syphilize great numbers of her people. Tennessee's swamps and ponds and stagnant pools, in towns and in country, are prepared to furnish mosquitoes enough to poison the world with malaria, and there are infected persons enough among her people to furnish all the poison necessary for malarializing the world without missing it at all. Tennessee is prepared with three state institutions for the insane, all crowded, and is apparently prepared to keep them crowded. Tennessee is prepared with reformatories and industrial schools in which unfortunate and defective children are cared for, and is prepared, through lack of provision for the proper training of defectives, to keep going a constant procession of children into her reformatories. Tennessee is prepared with jails and prisons in which she confines the insane for whom there is not room in her asylums. Tennessee is prepared with an asylum for the blind; and well may she be, when 39 of every 100,000 of her population is blind, in which pitiable record she is surpassed by only four states in the Union. Many of Tennessee's counties are prepared with "poorhouses" filled with beings which once were human, in which "poorhouses" no self-respecting hog would abide unless restrained as are the present inmates. Tennessee is prepared to exhibit on her statute books laws supposed to be in the interest of health conservation, which, for lack of modernity, can hardly be matched in any part of the world into which the light of civilization has penetrated for one moment of time. Tennessee is prepared to defy any state in the Union to show

less regard than she for the importance of disease prevention and the saving of human life, if that regard shall be measured by woful lack of appropriations of public moneys to be used in fighting communicable and preventable disease. And, finally, Tennessee is prepared, right down to the last fine point in preparedness, to defy the world, civilized and barbarian, to produce a brand of politics which for pure "cussedness" and progress-choking tendencies can in any manner justify its being mentioned in the same week with Tennessee politics. Because of it public-health interests must wait while jobs are provided for the faithful and while deals are consummated which will insure political supremacy to those who are in position to "trade."

Now! We have gotten a part of the truth on that side of the question out of our system, and we are willing to take the consequences. Shoot!

The other side of the picture will show that Tennessee is prepared to challenge the world to produce for inspection a country more beautiful and resourceful or a people more deserving of whatever is good than hers. Progressiveness and prosperity equal to the furthest advanced and most abundant she is prepared to show in spots. Some of her counties are full of beautiful homes and schools well located and well sanitated, and the almshouses and jails in these counties are well appointed and are managed humanely and efficiently. The men into whose charge the affairs of Tennessee's asylums and prisons have been given have already done much to better matters with respect to the physical conditions of these plants and with respect to the treatment and training of their inmates. The public-health workers in the state are struggling along as best they can with the facilities at their disposal for the promotion of the health interests of the state. At least one of the great political parties has written into its platform a plank pledging its nominees to provide modern laws and liberal appropriations for the public-health agencies of the state. Teachers and preachers and physicians and others have given a great deal of effort to the creation of a sentiment favorable to the adoption and application of health-saving measures. The press of Tennessee has done valiant work for the cause of health conservation. In numerous communities in the state the preaching of the gospel of health has been "as seed sown on good ground," and has led to the actual application of

sanitary measures which have proved their efficacy in the control of disease and in the preservation of health and life. There is yet reason to hope that in time Tennessee will come to realize that no preparedness can exist which does not make the prevention of disease and the care of human life its first charge. God hasten the time!

MEDICAL DEFENSE FOR MEMBERS.

It was made to appear in statements made in the House of Delegates at the Knoxville meeting that if the matter of medical defense were more clearly presented and explained to the members of the association, more of them would be disposed to pay their assessments and avail themselves of medical defense as offered by the association. For this reason the JOURNAL will again try to explain the plan and to present reasons why every member of the association should pay his medical defense fee and take advantage of the protection offered.

Every member of the Tennessee State Medical Association is entitled to defense by the association in suits brought for alleged malpractice, if his dues are paid and he is in good standing, upon the payment of the annual assessment of one dollar. The Medical Defense Committee, composed of Dr. S. R. Miller, Knoxville, chairman; Dr. Jere L. Crook, Jackson; and Dr. H. M. Tigert, Nashville, is in charge of this feature of the work of the association. All money paid for the purposes of medical defense of members is turned over to this committee. The committee has engaged the firm of Shields & Cates, one of the strongest law firms in Tennessee, as general counsel to direct the defense in all malpractice suits against our members. In case damages are awarded in any suit, the association will not pay such damages, the legal defense of the suit being the limit of the responsibility of the association. No suit will be defended which has grown out of any transaction prior to the time of payment of the medical defense fee for the year for which the fee was paid. In other words, if a member has paid his fee on June 7 and is sued for alleged malpractice in a case treated on May 31, he will not be entitled to defense by the association. No member of the association residing in another state than Tennessee will be entitled to defense, nor will any suit brought because of alleged malpractice outside of Tennessee be defended. The

association engages to furnish expert testimony and to give its moral support to the fullest extent in every suit brought against its members if the facts and circumstances justify. The medical defense assessment of one dollar should be paid to the county secretary and forwarded by him *immediately* to Dr. S. R. Miller, Chairman, Knoxville. All money sent to the secretary of the association is immediately forwarded to Dr. Miller. The names of members who have paid medical defense will be published in the JOURNAL at some time during each year. Separate receipts will not be sent to individual members, but receipts are always sent to county secretaries who have forwarded defense assessments to the secretary of the association. Dr. Miller stamps the official receipt of the committee on the back of every check received by him for the committee.

Medical defense is offered to members because malpractice suits have become more and more common and because it has been found that nearly all of them are brought without even a semblance of justification. Other state medical organizations than ours have had experience of several years in the operation of the same plan of medical defense as that which has been adopted by our state society, and have found that defense can be better given and with much less cost to individual physicians under this plan than in any other way. The mere fact that the organized profession is solidly behind its members, with all of its resources to defend them against unfair and unjustified prosecution, operates powerfully to discourage malpractice suits without just basis. Most physicians carry liability insurance, for which they must pay from \$15 to \$40 each year. They get no better legal advice when sued than they can get from the counsel of the association and have no more assurance of winning in the courts—not as much, in fact—than if their case is defended by the association. It is true that they are protected against damages to the extent of \$5,000, or so by insurance companies, but it is a rare thing indeed for a malpractice suit to be won by the plaintiff against a doctor of the right sort. Many of our members have never had to defend a suit and will probably never be called upon to defend one, but none can tell where the lightning is going to strike in these days when the bringing of malpractice suits has come to be a pastime of certain types of men. And, besides that, it is

a mighty little bit for one to contribute to the common cause of medicine—this one dollar a year. While it is probably true that surgeons are more liable to be called upon to defend damage suits, still it is true, in the experience of other state organizations, that more suits have been brought against general practitioners in the smaller towns and in the country than against those men in the cities who do the bulk of the surgical work. The fact has recently been brought out in California that more than ten per cent of the members of the society of that state have had malpractice suits brought against them.

Several of our county societies have adopted the plan of making the medical defense assessment a part of the annual dues required from their members, and so every member of such societies is entitled to defense by the state association.

FROM ONE THING TO ANOTHER.

A little more than a year ago the sale and manufacture of vodka was prohibited in Russia by decree of the Czar. It seems that the benefits that have accrued from this prohibition are considerable—nay, wonderful—in extent and in promise for permanent better things for this great nation. We read that far larger numbers are at work, and at work every day, than ever before; that day laborers are receiving greatly increased wages; that savings deposits have grown in a remarkable way; that better food is eaten and better clothing worn than ever before; that farming implements are being bought and used to a far greater extent; that crime has decreased more than sixty per cent, imprisonment seventy-two per cent, and the suicide rate enormously; that fire damage has fallen off nearly half; that hospitals which formerly were overcrowded are now not nearly filled to normal capacity.

But the death rate from drunkenness has *increased* enormously! The slaves to vodka have simply transferred their allegiance, and now pay tribute to other poisons which dull their senses and temporarily drive away their cares, finally to debauch and destroy their bodies and souls.

From one thing to another! There is, and has always been, an army of weaklings and degenerates who, when deprived of their possible indulgence in one dissipation, will take to another.

Will it always continue? Or will ever mankind be "bred up" to where all will be strong to resist?

THE FAMILY HISTORY.

Recently, Dr. Martin H. Fischer, of Cincinnati, while delivering a lecture on nephritis, was asked how he explained the etiological rôle of *worry* in the causation of that disease. He answered that he didn't believe that this was a cause, and went on to explain that when we are in doubt about the cause of any disease we fall back on what he was pleased to call the "old guard"—viz., hard work, worry, mental strain, etc. These terms have been copied from one textbook to another for so long that unless we really stop and think, we are hypnotized into believing that they really apply.

The same condition exists in regard to the family history. There is no excuse for a family history other than that by this extra precaution we may run across a disease that is hereditary. And the question is pertinent here: "What is definitely *known* about heredity beyond what Mendel's experiments proved?" The assumption that chromosomes are the carriers of hereditary tendencies is only borne out by observations on insects and some vertebrates. We are not quite sure yet of the number of chromosomes in the human cell. No one can hold with any definiteness that the diseases the family history is often aimed at—cancer and tuberculosis—are remotely hereditary. So what if the patient's father and mother both died of cancer, the question that arises in the diagnostician's mind in the individual case is: "What is the matter with *this* patient?" Isn't it far more important to know whether the patient has been living in the same house with a consumptive or not, be he brother or friend, than to know that his sister, whom he hasn't seen for ten years, died last month of tuberculosis? In other words, has the patient been unduly exposed to the causative agent?

From the standpoint of importance in the individual case the family history should have never occupied the beginning of the history. To hear a patient's complaint and then ask him if his father and mother are living and well is logically absurd and diagnostically unimportant.

While we are paying a little heed to the family history, let us give more attention to the pa-

tient's story of his illness. Skillful questioning to dispel irrelevancies in the patient's narrative, being careful not to make leading queries, is necessary to arrive at a true statement of the case; but always listen to the story—it will save many diagnoses.

HAT ON AND READY TO GO.

Did ever you go to a big city where were the headquarters of a concern, in which you thought you had an interest and of which you had been led to think you were a part, and call to pay your respects and make expression of your interest in things and your willingness to do your part to help?

We have. And when the "main squeeze" had us held out of his office long enough to allow him to put on his coat and hat, get his cane, put a package under his arm, shut his desk, and take his stand near the door, meeting us with a sort of a "Well-what-is-it?" air, we lost most of our interest in the organization he is supposed to represent. That's all.

THE A. M. A. AT DETROIT.

A great outpouring of physicians from many states and insular possessions of the U. S. A. and from Canada was present at the meeting of the American Medical Association at Detroit. The four or five days of the meeting were crowded with interest for those in attendance. Tennessee was well represented with physicians from sixteen of our counties. Drs. Jere L. Crook and S. R. Miller were in the House of Delegates as representatives of the Tennessee State Medical Association.

The reports of committees appointed by the 1915 House of Delegates to study various subjects of major importance to the profession and to the public were amazingly complete, and showed an immense amount of work as having been unselfishly done by the men who compiled them. These reports are published in the Journal A. M. A., and should be carefully studied by every doctor in the land.

Dr. Charles H. Mayo was made president-elect, and New York was chosen as the next place of meeting.

THE WINE OF CARDUI SUIT.

After a long-drawn-out and immensely expensive lawsuit, a jury in a Federal court at Chicago returned a verdict assessing damages of one cent against the Journal of the American Medical Association and in favor of the makers of Wine of Cardui, the plaintiffs in the cause. Our readers are familiar with the basic facts which brought about the action at law, and these need not be stated here. We are informed that the officers of the A. M. A. consider the outcome of the trial at Chicago a victory for their side. Perhaps it is, though many of us would be far better satisfied had no damages been awarded. One thing stands out most apparent to those who kept up with the record of the case—the patent-medicine fellows had some mighty shrewd lawyers.

NOTES AND COMMENTS

Are you a doctor? Fight cardui!

Apropos of commencement week, what has become of the man who took the medal in our class?

Tennessee was well represented at the Detroit meeting of the A. M. A. Fifty-two of our members were registered.

If the people of Tennessee could *select*, as well as *elect*, their representatives in the state Legislature and in Congress, we might get somewhere after a while.

A friend of ours contends that the greatest abdominal surgeon was an Irishman, O'Mentur. He also states that there was a great astronomer of the same nationality, O'Rion.

There is a very decided tendency upon the part of men in charge of the affairs of large organizations to boost the "big uns" and smother the "little uns." It's tiresome.

A verdict for one cent damages was given against the Journal of the American Medical Association in the suit brought by the Chattanooga Medicine Company, makers of "Wine of Cardui."

Dr. W. D. Haggard, Nashville, was honored by election as chairman of the Section on Surgery of the A. M. A. at the Detroit meeting. He was continued as a member of the Council on Medical Education.

For the first time in its history the Tennessee State Medical Association has more than 1,500 names of members on its roster. There are still considerable number who were in last year that have not been enrolled for 1916.

The next examination of applicants for appointment to the Medical Corps of the navy will be held at various places on August 7. Full information may be obtained from the Surgeon General of the Navy, Navy Department, Washington.

Have you done anything at all to help make your county society better than it was last year? Are you going to do anything? The year is nearly half gone. Get busy and do your part. You have a part to do if you perform your simple duty.

"What do I get out of it?" Who said doctors are poor financiers? Try to get a thousand of them to do a reasonable part for just any old worthy movement, and see how many of them will come through with the question at the beginning of this paragraph?

A letter from Dr. O. H. Williams, Savannah, informs us that the Hardin County Medical Society, with sixteen members, will soon ask for affiliation with the Tennessee State Medical Association. The society and its individual members will be received with open arms and a heartfelt welcome.

Dr. F. B. Reagor, Shelbyville, has returned from Rochester, Minn., where he underwent an operation at the Mayo Clinic for the removal of kidney stone which had given him serious trouble for some time. Dr. Reagor spent some time in study at the great clinic after he had recovered from the effects of his operation.

Dr. Martin H. Fischer, who electrified his audience at the annual meeting at Knoxville, delivered an address before the Symposium Club at

Nashville on June 2. The entire Nashville profession and that of counties adjacent to Davidson were invited to hear Dr. Fischer, and a large crowd was present to enjoy his address.

Dr. A. W. Harris, Nashville, attended the Detroit meeting of the A. M. A. and then went to the meeting of the Alienists and Neurologists of America at Chicago, having been appointed by Governor Rye as a delegate from Tennessee to the meeting of the last-named body. Dr. Harris spent two weeks in Philadelphia studying in the nervous wards of the Philadelphia hospitals.

This thing of tickling under the chin, patting on the back, and bulling with pretty talk has gone too far in some quarters. A good old-fashioned "cussin'" and a few swift kicks are badly needed instead. Too many swell up and strut around indefinitely after they have been sweetened with pats and nice talk, and do nothing in the end. If they had a few bars of the devil frailed out of 'em, they might pout and fume a while, but would "come through" at last.

When the discussion is opened, we hear, "I enjoyed the paper very much," etc.; or, "The society is to be congratulated upon the presentation of such a splendid paper," etc.; or, "I wish to thank the doctor for his paper," etc.; but, above all, this one, "I didn't hear the doctor's paper, but," etc., etc., and then talk a week on something entirely beside the question. As a panacea for the above bromides we recommend this: Have something to say, say it, and sit down.

A young man using various names—among them "L. D. Grant," "H. E. Peters," "R. A. Douglas," and "F. C. Schneider"—is traveling through the country fraudulently soliciting orders and collecting money for subscriptions to medical journals and medical books. He gives a receipt to his victims bearing the heading of some society or association, and represents himself as a student who is trying to pay his way through college out of the money he can earn as a salesman of medical works. W. B. Saunders Company, which firm he fraudulently claims to represent, asks the JOURNAL to warn its readers to be on the lookout for this swindler.

Dr. Robert T. Morris, in his book, "Doctors

vs. Folks," says: "Avoid criticism of colleagues in private conversation, and save critical energy for the medical meeting." This reminds us that it sometimes happens that the men who may oppose each other most violently on the floor of a society meeting may still be friends. In the intensity of the discussion of a scientific principle heat may be exhibited, for friction always generates heat, you know; but the discerning mind can always tell the difference between personal animosity and professional jealousy and the honest difference of opinion on a scientific problem. The fellow who sits next to you and urges you to get up and give the speaker the devil is often the one who reaches for his hammer when the meeting adjourns.

The number of medical schools in the United States has been reduced from 166 in 1904 to 95 in 1915—43 per cent; and the number of students enrolled dropped from 5,747 to 3,536 in the same period. In the state of Ohio last year fourteen different medical cults asked for separate boards of examiners to test their qualifications to practice. The various hospitals of the country are clamoring for internes this year. Pretty soon we shall hear the urgent call of the rural communities for a doctor. Still a fifth medical year is in immediate prospect. A special one-year-in-college course is required for admission in medical schools, and Tennessee has not a half dozen counties in the state that have a four-year high school. The medical profession may yet be its own undoing in its sudden and reactionary regulation of itself. Why not regulate the other fellow for a while? G.

SOCIETY PROCEEDINGS

HENDERSON COUNTY.

The Henderson County Medical Society, one of the strongest organizations in the state, had its fifth annual outing at Hinson Springs in June. These yearly outings of this society have come to be considered as largely instrumental in the success of the medical organization of Henderson County. They are characterized by their lack of formality, a general spirit of everybody-have-a-good-time-and-forget-all-your-troubles, a fine old-fashioned barbecue, and a scientific meeting. A number of guests from various points in the

state are always on hand and glad to be there. At the recent outing Drs. A. B. Dancy and Ambrose McCoy, Jackson; J. Hugh Carter and W. L. Howard, Memphis; H. M. Tigert, J. F. Gallagher, and E. M. Sanders, Nashville, were contributors to the scientific program.

Since Henderson County has constantly maintained a strong membership in a going society the JOURNAL would commend their plan of holding a yearly all-day outing to the other county societies of the state as entirely worthy of emulation.

M McNAIRY AND HARDIN COUNTY, TENN., AND ALCORN COUNTY, MISS.

A joint session of the medical societies of McNairy and Hardin Counties and the society of Alcorn County, Miss., was held at Shiloh National Park on Thursday, May 25. After the usual formalities attending a meeting of this nature, a scientific program was presented, which various members of the profession of the three counties contributed. It was decided to make this meeting of the three county medical societies an annual affair, and organization was perfected to that end.

The JOURNAL takes pleasure in publishing the request of the gentlemen who were present at the following address delivered by Mr. DeLo Rice, secretary of the Board of Commissioners of the Shiloh National Park, in welcoming the physicians to the park for the purpose of holding their meeting:

Ladies and Gentlemen:

Whatever we may owe to men of the other great professions, we owe more to the doctor than to any other. His profession is one of the oldest. Like literature, art, and music, it reaches back to the days of myths and fables.

Fifteen hundred years before Christ, Esculapius received the first shadowy science of medicine from Cron and practiced healing among the demigods of antiquity who rode upon the winds and waves and clouds. From the crude knowledge, though wondrous wisdom of Hippocrates and Galen has grown the marvelous science in which you gentlemen are workers to-day. In centuries the march of that science was slow, and other lines of progress outstripped it and left it in comparative darkness.

Raphael stood on the highest eminence of art and painted pictures which to-day have no rivals in the galleries of earth, four hundred years before the simple cause of yellow fever was discovered. From the pen

Shakespeare all literature slopes downward into the two eternities, yet he had slept in the tomb four years when Harvey announced the discovery of the circulation of blood. The matchless brain of the supreme poet, which gathered all nature into its throbbing folds, never knew that the blood which nurtured it was a flowing stream, never knew that the heart was a bubbling fountain and the pulse a crimson current.

But your great men of research have opened the gates of darkness, and you are solving the mysteries of life and death. By the merciful touch of the anæsthetic you have made a painless pathway to the vitals of man, and by the use of antiseptics you have all but vanquished infection. In the antitoxins you have harnessed corruption and made it produce incorruption. You have uncovered the astounding fact that house flies kill more children in a single year than were slain in all the Indian massacres of pioneer days. You have convicted the mosquito of a million murders. Tetanus, diphtheria, and smallpox are weak and fleeing fugitives before your skill. You are close to the hidden lairs of tuberculosis and cancer; and who knows but that, in the long march of time, you will scourge all the imps of disease from the human blood and leave the body to ripen with age and fall to its destiny of dust like some perfect fruit that receives its finishing kiss from the sun and parts from the twig of life? Long may you live to make us live long! You are the first and the last friend, for you are at the sunrise and the sunset of every life.

As men of science, I greet you; as benefactors of the race, I greet you; as friends and neighbors, I welcome you.

BOOK REVIEWS

ENDEMIC DISEASES OF THE SOUTHERN STATES. By William H. Deaderick, M.D., and Loyd Thompson, M.D. W. B. Saunders Company, Philadelphia, 1916.

This excellent treatise on certain diseases found rather extensively in the South, but by no means limited to our section of the country, comes at an opportune time. Discussion is limited to malaria, blackwater fever, pellagra, amebic dysentery, and hookworm disease, with short chapters on other forms of intestinal parasites. Yellow fever and other conditions not endemic, but which may at times visit us, are not included. All of the five main topics are treated in a rather exhaustive manner, not omitting very interesting remarks on their history; and on every phase the literature, foreign and domestic, has been thoroughly studied and the sources cited. It is pleasing to note that every subject is approached with an open mind, and no efforts are made to establish personal theories. The difficulties both in diagnosis and treatment are not minimized.

An especially valuable feature of the book is the attention paid to preventive measures. A careful reading of these chapters will not only teach the methods of preventing these diseases, but will serve to quicken professional conscience on preventive measures in general.

The literary style is good, and the illustrations illustrate.

It is of interest that at least one of the authors, Dr. Deaderick, is a Tennessee boy and educated at one of our medical schools. W. H. W.

RULES FOR RECOVERY FROM TUBERCULOSIS.

By Lawrason Brown, M.D., Saranac Lake, N. Y. Lea & Febiger, Philadelphia, 1916. Cloth, \$1.25.

This little book is written for the layman, either a victim of tuberculosis of the lungs or one interested in the prevention and cure of this widespread scourge of mankind.

Medicinal therapeutics is very properly avoided; only a very short reference is made to specific tuberculin treatment, in which the views expressed are somewhat undertoned, but fair to both sides of the question, and not far from correct.

The author's chief concern is to so train and instruct the uninformed consumptive in matters of a personal nature as to enable him to intelligently "avoid blunders" which so often bring disaster. This monograph is brimful of the best that is known, and should be in the hands of every consumptive in the land.

The book cannot be too strongly indorsed. C. A. R.

SURGICAL AND GYNÆCOLOGICAL NURSING.

By Edward Mason Parker, M.D., and Scott Dudley Breckenridge, M.D., respectively, Surgeon and Gynecologist to Providence Hospital, Washington. J. B. Lippincott Company, Philadelphia.

This is a most complete and practical work, which will be thoroughly appreciated by all competent surgical nurses. Fine judgment has been exercised in the make-up of the book, only such matter as is necessary for consideration by nurses who would be thorough having been presented, and presented in a way that puts emphasis where emphasis should be; at the same time minute details are not at all neglected. This is really a textbook for nurses.

THE CLINICS OF JOHN B. MURPHY. Vol. V., No. 3. June, 1916. W. B. Saunders Company, Philadelphia.

Out of the abundance of material which is his to command, Dr. Murphy is always able to select instructive cases, and, through his great skill as a teacher, to present them in a most impressive and helpful manner. This number of the Clinics is of special value because of the varied subjects presented. Two cases of cancer of the rectum, treated by Knaske ablation, are of much interest.

COLLECTED PAPERS OF THE MAYO CLINIC. 1915. Vol. VII. W. B. Saunders Company, Philadelphia, 1916. Cloth, \$6.

It would be hard to find a compilation of scientific information on so many important subjects of present interest which would in any way measure up to Volume VII. of the Collected Papers of the Mayo Clinic. Con-

ditions rare and common, simple and complex, apparent and obscure; etiology and pathology, diagnosis and differentiation, treatment and prognosis, surgery and medicine, Roentgenology and electric therapeutics, blood pressure and anæsthesia—anything and everything are instructively treated somewhere in this collection of thoroughly scientific papers by the master workers who labor *together* in the great Mayo Clinic. Surgeon, internist, ophthalmologist, aurist, rhinologist, laboratory man, X-ray man, anæsthetist—every kind and type of worker in medicine will find “something to chew on” in this book.

When one endeavors to select outstanding features of this volume for special mention, he finds it impossible to make selections, for the reason that every paper is a real contribution to the literature of the day.

DISEASES OF THE DIGESTIVE TRACT AND THEIR TREATMENT. By A. Everett Austin, M.D., Tufts College. C. V. Mosby Company, St. Louis, 1916.

This is a good book from the author's preface on through. It is not intended as an encyclopedia, and

hence has a great deal left out which we find jammed and crowded into some other books by authors who do not seem to realize the utter futility of trying to tell it all. Dr. Austin is not afraid to cut out what is not proven, even though it be something which in late years has been voluminously discussed by multitudinous writers and talkers. Intestinal stasis as an entity and resection of the colon receive mighty little attention by this author. His own methods are given prominence, but there is no tiresome “hobby-riding.” The chapter on “Examination of the Patient” is a strong chapter, as is that which follows on “Physical Methods of Examination of the Digestive Tract.” Dr. Austin, with other gastroenterologists, continues to recognize certain symptom groups as disease entities which many thinkers long ago began to look upon as merely parts of the whole picture of more thoroughly established disease conditions.

The United States Public Health Service found seventy-eight per cent of the rural homes in a certain county unprovided with sanitary conveniences of any kind.

STATEMENT

In compliance with an order of the Post Office Department passed on August 24, 1912, we publish below data required in Section 467, I-2, 2, 3, 4, and 5:

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., OF THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION,
Published Monthly at Nashville, Tennessee.
(Required by the Act of August 24, 1912.)

NOTE.—This statement is to be made in duplicate, both copies to be delivered to the postmaster, who will send one copy to the Third Assistant Postmaster-General (Division of Classification), Washington, D. C., and retain the other in the files of the post office.

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OLIN WEST, *Secretary-Editor.*

Sworn to and subscribed before me, this 8th day of July, 1916.

F. B. BLAIR, *Notary Public.*

My commission expires, 1919.
Form. Seal.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

OLIN WEST, M. D., Editor and Secretary

J. F. GALLAGHER, M. D., Associate Editor

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NUMBER 4

THE SIGNIFICANCE OF RETINAL CHANGES IN CARDIORENAL- VASCULAR DISEASE.*

By F. PHINIZY CALHOUN, A.B., M.D., F.A.C.S.,
Atlanta, Ga.

It is an acknowledged and admitted fact that suggestive, even definite, changes take place in the retina and its vessels indicative of cardio-vascular disease. To-day, with our more exact methods of laboratory examinations and diagnosis in renal-vascular diseases, together with the routine, yet careful, examination of the eye grounds, we are permitted to detect early changes in the kidney and arterial system. These changes can be arrested in a large proportion of cases when properly and rationally treated.

It is not within the province of this paper to discuss the relationship of chronic nephritis with arteriosclerosis, for my personal views would be of no value unless substantiated by facts. However, Bulson, writing on a similar subject, giving as his authority several well-known writers, states that it is an accepted opinion that a chronic nephritis is due to a local form of a general arteriosclerosis, and should not be considered as a disease *per se* of the kidney. Also the eye changes, which will later be described, are similar to those which take place in the kidney; for the toxic substances of the blood are brought into intimate contact with a terminal system of vessels, and "the evils of obstructed circulation cannot be averted by collaterals." Osler mentions that there may be advanced sclerotic changes in the arteries of the head, heart, and kidneys without changes in the palpable vessels, and the ret-

inal arteries are the most important blood vessels in which changes may be noted. While it is true that changes in the retinal vessels may be manifest in any type of arteriosclerosis, they are particularly likely to be present in cerebral arteriosclerosis, or they presuppose a similar state in the cerebral arteries, but not necessarily the reverse (Knapp). Yet even in this type, as Brunner points out, we must realize the limitations in the value of our findings and recognize the fact that certain reservations must be placed upon the interpretations of the ophthalmological examination.

In certain cases of early or suggestive arterial changes in the retina we are not able to detect by examination other evidences of cardio-vascular changes; yet if such cases are carefully watched, certain positive symptoms will later develop. An interesting case which I have had the opportunity of following well illustrates this point. John H., aged twenty, a college student with marked athletic tendencies, had consulted me on account of attacks of transient blindness and occasional headaches. My examination was entirely negative, except that I detected an undue intensity of the yellowish lines seen on retinal arteries, especially of those vessels in the left eye emerging from the nerve. Although similar changes are also seen in normal eyes, my attention was so directed to these that a note was made on the history. Finding no positive cause for his complaint, I referred the patient to his family physician, a very careful internist, for a general physical examination, who reported that he was apparently normal and exceptionally well developed. He returned to his studies at an Eastern university and became actively engaged in athletics, later becoming a 'varsity oarsman. Two years later he entered the University of Georgia, and was active in football, when one

*Read at the annual meeting of the Tennessee State Medical Association at Knoxville, April, 1916.

evening after a hard "work out" he noticed that he was blind in the left eye, and I saw him again the following day. There was found a typical picture of endarteritis obliterans of the central artery of the retina (so-called "embolism"). A physical examination disclosed a blood pressure of 178 m.m Hg., and a greatly dilated heart; yet all the other organs and laboratory examinations, including a Wassermann, were negative. Absolute rest in bed for eight weeks brought his blood pressure to within normal limits and his heart to a correct size and position. Unfortunately, though not unexpectedly, the eye developed the usual atropic change in the optic nerve, and complete and permanent blindness ensued.

The changes which are noted in the eye may be classified, for the sake of convenience, into (1) suggestive and (2) positive; and of the latter type we recognize (a) early and (b) late pictures.

Of the suggestive signs, an undue tortuosity of the retinal arteries, especially of the second or third branches, is noted; an unevenness in the caliber and an increased distinctness in the light streak of the vessels are the most prominent changes. These changes are, however, only suggestive; for tortuous vessels are sometimes seen in normal eyes of normal individuals, and should not be considered alone, but in association with the other signs, such as constrictions of and alterations in the vessel wall, giving it a yellow streak, which in late well-developed cases are called "silver-wire arteries."

In regard to the early positive signs, there are the corkscrew arterial twigs running from the disc, or of those branches in or near the macula region; the venous compression or indentation caused by the crossing of a sclerotic artery, which has been compared to a small metal rod laid across a rubber tubing; also a beaded appearance of the artery, with its sacculations or ampulliform dilatation, which in reality are aneurysms; the narrowing of the arteries to such an extent that in marked cases it will cause optic atrophy and finally changes in the color of the arteries; and the so-called "silver-wire arteries," due to degenerative hyaloid and fibroid changes in the vessel walls. A slight blurring of the optic disc, accompanying any or all of the above-mentioned changes, is not uncommon.

As a result of these various changes in the

vessel walls or of the toxic substances in the blood, hemorrhages develop into the retinal tissue. Small flame-like hemorrhages need not be late manifestations of an early arteriosclerosis if I may so express it. These hemorrhages do not occur at the actual area of the diseased vessel or where the vessel is thickest, but at some unthickened spot or in the capillaries where the wall is incapable of much thickening; and it is due to the damming back of the blood, together with an increased pressure. In addition to the early changes noted, there may be one or more yellowish spots in the retina, indicative of an absorbed hemorrhage, or a true inflammatory exudate.

When late ophthalmoscopic signs of cardio-renal-vascular disease are detected, usually there are already other cardinal symptoms present which makes the diagnosis more certain. It is not uncommon to see in these late manifestations a neuro-retinitis, along with large areas of retinal exudates and hemorrhages, with additional sclerotic changes of the retinal arteries, accompanied by a thrombophlebitis. It is, therefore, in the suggestive or early positive stage where careful ophthalmological examination is most helpful to the patient and internist. It is in these cases where one most expert in the use of the ophthalmoscope can detect changes, whereas in the late well-developed pathological fundus any untrained eye can readily see the picture.

In the attacks of acute nephritis where the eye grounds show changes, there is the usual sudden onset of retinal exudates and the accompanying bad sight, probably due to the malignant and fulminant type of toxæmia. Unfortunately, in the prodromal stage of acute nephritis, eyes are rarely examined except by accident; however, when seen, they often reveal the same fundus picture, except the arteriosclerotic changes, and those developing in the slower forms of nephritis.

SYMPTOMS.

The symptomatology in the early cases which we have described may be wanting. Eye changes are most often detected in the routine fundus examinations of the ophthalmologist in cases where he has consulted him for an adjustment of glasses for distance or near. Headaches may be the predominant symptom which directs the patient to this doctor.

Cases are also referred by the internist to the

ophthalmologist for a careful fundus and field examination when he suspects cerebral arteriosclerosis, or after his examination is negative; and it is in these doubtful cases that the suggestive or early signs are first noted and are of such importance.

Blurred, foggy, or complete loss of vision, however, are more positive subjective symptoms which direct the patient's attention to his eyes. And we must be mindful of the fact that transient obscurations of vision, which are usually due to vascular spasms of the retinal arteries, are often associated with a disease or degeneration of the vessel wall, and are predominant symptoms of an obliterative endarteritis, and, if the disease or its cause is unchecked, may lead to sudden and permanent blindness.

If retinal hemorrhages develop, vision need not be affected unless the macular region is involved; and even in the late or more positive fundus changes the effect upon vision will depend entirely upon the extent and location of the exudates or hemorrhages. Lesions near the macula or detachments of the retina result in marked impairment of vision.

While it is not strictly pertinent to our subject, I feel that I would not be amiss if a word were mentioned concerning the retinal changes occurring during pregnancy. In a recent article by Herbert Fisher, of England, on the "Retinitis of Pregnancy," he purposely omitted from the title the term "Albuminuria," as he wished to lead his readers away from the idea that the acute retinal changes were the results of kidney disorders. I believe I quote correctly the modern views of the obstetricians in saying that they no longer explain the albuminuria, eclampsia, and vomiting of pregnancy as the result of some mechanical pressure on the uterus or to some other obscure reflex effect due to pregnancy, but to certain toxic products in the circulation. In fact, this same writer says that in the retinitis of pregnancy the pathology of the retina is different from that in albuminuric retinitis; for in the former the choroid is affected, while in the latter the changes are largely confined to the retina.

While there is no special fundus picture of a retinitis of pregnancy, except possibly the vastness of the exudation, we find, in addition, hemorrhages and an oedema, indicating an acute toxæmia. Here, too, the effect upon sight will depend upon the severity of the attack, as well as

the extent and location of the hemorrhage or exudate.

SIGNIFICANCE OF RETINAL CHANGES.

It is generally understood that the diagnosis of many cases of nephritis is first made by the ophthalmologist, often where there are no other evidences of the disease. Here, too, in beginning or general arteriosclerosis the ophthalmoscope gives us valuable information. As to the prognostic significance of these changes, many questions must be considered, and most important is the one whether or not syphilis is present or the underlying cause. From the observations and writings of many careful men, "vascular changes in the retina due to syphilis have not the same serious general prognostic importance as the corresponding arteriosclerotic changes." (Knapp.)

As has been previously mentioned, positive arteriosclerotic changes in the retina strongly suggest similar changes in the cerebral vessels. A correct interpretation would then indicate that such patients are liable to cerebral complications, such as apoplexy, and a statistical study demonstrates that fact. Of 44 cases reported by Raehlmann, there was a subsequent hemorrhage in 10, or 21 per cent. Marcus Gunn reported 14 cases of intraocular-vascular disease in which cerebral hemorrhage subsequently occurred. The subsequent history of 17 cases of distinct retinal arteriosclerosis were investigated by Geis, in which were recorded 17 deaths from cerebral apoplexy in not later than four years, and we have all of us met with similar cases.

Transient blindness occurring in cases with diseases of the retinal arteries offers interesting study, and often it is a forerunner or warning of impending danger to one's sight. This phenomena is due to a narrowing or an obliteration of the retinal arteries, producing retinal anæmia, caused from a proliferation of the intima of the vessel wall; and when the obstruction becomes complete, the accompanying blindness is usually sudden and permanent, depending, of course, upon whether the attacked vessel is the central artery of the retina or a branch. These cases over forty years of age have the same grave significance as visible arteriosclerosis and retinal changes, although in younger people Knapp believes that closure of the central retinal artery has no unfavorable prognostic significance. This

is probably explained by the difference in the pathology of an endarteritis obliterans and a periarteritis, the younger individual having the former, while the older would probably develop both.

These cases, however, should not be confused with the arterial spasms or closures which are a vasomotor phenomena, occurring often in epilepsy, migraine, eye strain, and autointoxication in otherwise apparently normal eyes.

In retinal arteriosclerosis there is usually an accompanying increased blood pressure, and when unduly high retinal hemorrhages occur. On the contrary, retinal hemorrhages develop without pronounced arteriosclerotic changes. In a statistical study of 100 cases by Fox and Batroff, in which the relationship between retinal hemorrhage and high blood pressure was especially noted, they found an excessive high blood pressure in 80 per cent. The clinical diagnosis in these cases was: Chronic interstitial nephritis, 40 per cent; arteriosclerosis, 27 per cent; and chronic parenchymatous nephritis, 13 per cent. What part arteriosclerosis plays in causing the nephritis, or the reverse, we are not told; and upon this point hinges so much of the discussion and doubt from our most careful clinicians.

Large patches of exudation appearing in the retina, or the arrangement of the exudate like the spokes of a wheel in the region of the macula, present, in fact, all the signs of a typical albuminuric retinitis. These changes, denoting the beginning of a profound systemic toxæmia, may or may not be associated with an arteriosclerosis, with the accompanying retinal hemorrhage. In my experience such a combination brings about an early termination, although this may be doubted.

In Rogers' statistics of fatal cases of albuminuric retinitis, based on 75 cases, he noted that the duration of life increased with the age of the patient; and the younger the patient, the worse the prognosis in point of time. The average duration was twelve months.

While alterations in the retinal veins frequently occur, a thrombosis is often looked upon as being a local change; and, according to Coates, it offers very little information with regard to the prognosis for life. A retinal hemorrhage from a thrombosed vein, unless accompanied by a well-marked sclerotic change in the retinal arteries, does not offer real serious prognostic significance.

In diabetic retinitis my experience has been that the prognosis has been less grave than that of Bright's retinitis. With the retinal hemorrhages which frequently occur, and which are due to some pathological change in the vessel wall from an excessive high blood pressure, the prognosis is about the same as in case of arteriosclerosis.

In regard to the prognostic significance of the retinitis of pregnancy, as a general rule, as far as life is concerned, it offers no grave outlook for the future; and the mortality after this form of retinitis is much less than in any form of nephritis. Nettleship reported 22 cases of retinitis during pregnancy, of which he knew of but one that died within two years. A chronic nephritis may subsequently develop, although it may have preceded the pregnancy. Of the 8 cases which I have observed, all were alive when last heard from (the longest being seven years), and in a fair state of health. Marked impairment in vision, which usually remained permanent, was the general rule. It has been my custom to advise the avoidance of future pregnancies, as it is the common belief to be one of the safeguards, notwithstanding the fact that several authorities report many cases in which, with further pregnancies, no recrudescence of the retinitis or nephritis occurred.

CONCLUSION.

1. A careful inspection of the fundus of the eye in all cases should be a part of the routine examination by the ophthalmologist.

2. Slight changes in the retina or its blood-vessel system are often warnings of a serious renal or general vascular disease.

3. "Distinct arteriosclerotic changes in its retinal vessels indicate a similar state in the cerebral vessels, but not the reverse." (Knapp.)

4. Arteriosclerotic changes and retinal hemorrhages are each indicative of an increased blood pressure.

5. Obscuration in vision, associated with retinal arteriosclerosis, offers a grave prognosis for sight.

6. Retinal exudates occurring in a nephritis are of the utmost gravity, death usually occurring within two years.

7. The retinitis of pregnancy does not offer the same grave significance except for the permanent impairment of sight.

8. Retinal changes due unquestionably to syph-

ilis do not offer any very unfavorable significance regarding life.

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RETRODISPLACEMENTS OF THE UTERUS.*

REPORT OF LAST ONE HUNDRED CASES.

INDICATIONS AND CONTRAINDICATIONS FOR THE EMPLOYMENT OF THE PESSARY, BARRETT, AND BALDY-WEBSTER OPERATIONS.

WILLIAM T. BLACK, M.D., F.A.C.S.,
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The uterus, a freely movable organ, is found in an anteflexed position in the pelvic cavity, the body and fundus forming a right angle to the vagina. This position is changeable to a limited degree temporarily by an overdistended bladder, constipation, respiration, and other causes; but this position is the most constant one under normal conditions. It is kept in position by a number of causes—viz., an intact pelvic floor, intra-abdominal pressure, other pelvic organs, uterine ligaments, and by the normal relation which the uterine axis bears to the axis of the vagina. The most fixed point is at the junction of the body and cervix, where the vagina, utero-sacral and vesical ligaments, with a strong pelvic fascia, forms a strong pelvic diaphragm. The body and fundus are very much more movable, being kept within certain limits by the ligaments, pressure, etc.

The most important structure in acting as a primary cause of retrodisplacements (in the

woman who has become a mother) is the giving away of the pelvic floor—a condition which allows the uterus to descend and drop back, and, in time, intra-abdominal pressure, which is exerted against the uterus in an abnormal manner. Instead of the pressure being exerted against the posterior surface of the uterus, it presses against the top, and finally against the anterior surface, pushing it further backward and downward, overcoming the round ligaments which act as guy ropes in holding the uterus forward. It has been proven by Noble, by experimentation, that when the pelvic floor is lacerated, the uterus can only withstand just one-third as much pressure as when it is intact. Various other factors—such as displacements of other pelvic structures, a relaxed abdominal wall, cervical lacerations, subinvolution of the uterus, uterine and adnexal diseases, etc.—play their respective parts in backward displacements.

It is variously estimated that from one-fourth to one-third of all women have backward displacements of the uterus; some are congenital, while others are due to various pathological conditions. After the menopause, the atrophied uterus is found retroverted.

How can this condition be relieved? A great many displacements are discovered accidentally when examining for other pelvic lesions, and are not producing symptoms or trouble, therefore require no treatment.

Treatment is divided into the operative and the use of the pessary.

The pessary is beneficial in recent primary cases. In primary displacements of long duration it should be used only when the patient refuses operation or when for some reason you consider her a poor surgical risk. In displacements following labors, abortions, and miscarriages, without other pelvic lesions, the pessary is very useful for the relief of symptoms and for the cure of the conditions. During the first three and a half or four months of pregnancy (in a retrodisplaced uterus) it holds the uterus up until the pregnant uterus passes beyond the pelvic brim, and prevents it from becoming incarcerated in the backward position, and producing a miscarriage.

The proper treatment of a long-standing retrodisplacement, producing symptoms, is necessarily surgical. The fact that we have over fifty different named operations for the correction of this

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lesion assures one that there must be failures following each type of operation.

I wish to report the last one hundred cases (until October, 1915) which I have operated upon, and then make remarks regarding individual cases in which I have had failures or noticed something of importance. The report is made because of failures and because I believe I have found out in certain cases why I have failed to obtain the desired result, and not because of any unusual results. The report includes both primary and secondary displacements:

No.	Case	Age	Pri.	Sec.	Null.	Mult.	Oper- ation	Result
47	288		25	Yes		1	Lft. S.O. Resect. Rt. O. (Lig. attached posteriorly)	Unknown
48	308	18	Yes			Single	B-W	Good
49	323	24		Yes		Yes	Double S.O. (Lig. Post.)	Good
50	324	25		Yes			Lig. Post. 2S. Lft. O.	Unknown
51	331	31		Yes			Lig. Post. Lft. S.O.	Good
52	343	23	Yes		Yes		B-W (Until after labor) (See below)	Good
53	362	33	Yes		Single		B-W	Good
54	378	28		Yes		*3	Double S.O. Supra Vag. Hyst.	Good
55	414	39	Yes		Yes		B-W (Pseudocyesis)	Good
56	424	24	Yes		Yes		B-W	Good
57	434	23	Yes			1	B-W	Good
58	439	33	Yes			2	B-W	Good
59	445	37		Yes		5	Double S.O. Supra Vag. Hyst.	Good
60	453	37	Yes			2	B-W	Good
61	468	53	Yes			10	B-W	Good
62	473	23		Yes		1	Lig. Post. Double S.O.	Unknown
63	489	24		Yes		2	R. S. Rt. O. (4 months later, U. retroverted); Webster L. side, R. L. Post.; L. O. cystic. (Ovariectomy, Supra Vag. Hyst.)	Good
64	496	25	Yes			2	B-W	Good
65	511	23	Yes			1	B-W	Good
66	521	22	Yes		Yes		B-W	Good
67	529	19		Yes	Single		Double S.O. Supra Vag. Hyst.	Good
68	533	42	Yes			2	B-W	Good
69	535	52	Yes			6	B-W	Good
70	538	23	Yes		Single		B-W Lft. O.	Good
71	540	27		Yes	Yes		Double S.O. Supra Vag. Hyst.	Good
72	546	27	Yes			1	B-W	Good
73	581	38		Yes		5	Lig. Post Rt. S.O. L. side Webster modified	Unknown
74	587	56		Yes		7	Lig. Post. Rt. S. O. L. side Webster modified	Good
75	590	22	Yes		Yes		Barrett (Retro Position)	Fair
76	603	36		Yes		2	Double S.O. Supra Vag. Hyst.	Good
77	614	19		Yes	Single		Lig. Post. Double S.O.	Good
78	627	54		Yes		3	Double S.O. Supra Vag. Hyst.	Good
79	631	27	Yes			3 Miss	B-W	Good
80	654	21		Yes		1	Lig. Post. Double S.O.	Good
81	659	30	Yes			6	Barrett	Good
82	661	37	Yes			8	B-W	Good
83	663	40		Yes		2	Lig. Post. Double S.O.	Good
84	666	26	Yes			2	Lig. Post. Lft. S.O.	Good
85	673	31		Yes		3	S.O. Supra Vag. Hyst.	Good
86	681	36	Yes			6	Barrett	Good
87	686	36		Yes		1	Lig. Post. Double S.O.	Good
88	689	36		Yes		3 Miss	Lig. Post. Double S.O.	Good
89	697	26	Yes			3	Lig. Post. Lft. S.O. Varicose Veins	Good
90	698	34		Yes		7	Lig. Post. 2S. R. O.	Unknown
91	706	30	Yes			3	Supra Vaginal D.S.O.	Good
92	730	39	Yes			2	B-W	Good
93	737	34	Yes			5	Lig. Post. Lft. S.O.	Good
94	745	24	Yes			2	Lig. Post. Rt. S.O.	Good
95	764	22		Yes	Yes		Lig. Post. Double S.O.	Good
96	769	34	Yes			2	Lig. Post. RT. S.O.	Good
97	771	27	Yes			1	B-W	Good
98	802	28	Yes			2	Barrett	Good
99	816	21	Yes			1	Barrett	Good
100	280	30	Yes			2	B-W	Good

Of the above numbers, 68 were primary and 32 secondary displacements; 87 were married; 13 were single; 65 were mothers; 35 were sterile; the average number of children to each mother was $3\frac{1}{2}$.

TYPES OF OPERATION.

Barrett	20
Alexander-Adams	1
Baldy-Webster	36
Internal Alexander	1
Ligaments fixed to posterior portion of uterus	27
Supravaginal hysterectomies	14
Operation unknown	1

There have been a few to have children since operation without a return of the condition.

I am unable to give the final results in some of these cases, owing to my inability to hear from them. A great many have, however, been reëxamined, and the final results of the operation can be given. I have reported as good results a few recent cases where the immediate result has been good, but the length of time from operation has not been sufficiently long to justify making a final report. As this report has been made, however, to try and point out the defects in judgment and technic, and not to extol any great achievements, therefore the final results are only of value in so far as failures are concerned.

There were three failures—two of them in a primary and one in a secondary displacement—of which I shall speak later.

In these cases the appendix was removed in the majority of instances.

Hemorrhoidectomy was performed in three cases; pericolic membranes were resected in several; Lane's kink was corrected in one or two; and other abdominal and pelvic lesions were corrected where possible and necessary.

Perineorrhaphy was performed in all primary cases when needed.

Colporrhaphies, trachelorrhaphies, Pozzi operations, amputation of the cervix, etc., were done when the case demanded same.

The work done upon the uterus and adnexa has been given in the report.

It will be observed from the above report that the average age at the time of operation was thirty years. Four were under twenty years of age and four over fifty years of age. Of the four under twenty years of age, all were single.

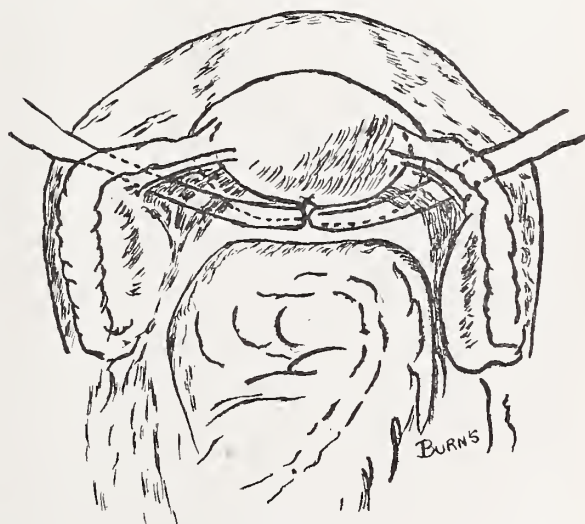
Two (Nos. 67 and 77) were for secondary displacements, and two (Nos. 11 and 48) were for primary. No. 48 was operated by the Baldy-Webster method, and No. 11 by the Alexander-Adams. The latter was the only case in which an intraperitoneal exploration was not carried out.

I believe that in carefully selected cases we should perform the Alexander operation or a modification of it oftener, so as to lessen the danger of some of the things which at times follow the intraperitoneal operations. Of course if there are symptoms or a suspicion of lesions within, it should be supplanted by a laparotomy.

Of the four over fifty years of age, two (Nos.

74 and 78) were secondary. Two (Nos. 61 and 69) were primary. In these two cases there were present rectoceles, cystoceles, a cervical laceration in one (No. 61), and a sagging to a moderate degree of the pelvic diaphragm. The cystoceles and cervical tears were corrected, and very high perineorrhaphies performed in each with a Baldy-Webster. These two cases have been examined rather recently, and both are in perfect positions, with relief of symptoms. I would not advise such a procedure in more exaggerated cases of prolapse, for such would usually end in failures.

In fourteen cases, where the tubes and ovaries were removed and the uterus was found badly



(No. 2.)
Baldy-Webster Operation.

diseased or there was left a large denuded surface for adhesions, a supravaginal hysterectomy was performed.

In twenty-four cases, where a tube or tubes and ovaries were removed, the round and broad ligaments were fixed behind the fundus of the uterus to hold it forward and to cover raw surfaces.

In cases where the tube and ovary were removed on one side only, the ligaments were brought back, as described above, on the removed side, and the other one brought through the broad ligament, under the ovarian ligament, as in doing a Webster.

The first case in which I had a failure was case No. 43 (in 1912); type of operation, Baldy-Webster. The uterus in this case was enlarged and flaccid. The uterus dropped back over the

ligamentous attachment and produced a marked retroflexion, which was worse than the original trouble. One year later adhesions had formed between the omentum and intestines with the posterior attachment of the ligaments and linen



(No. 3.)

Baldy-Webster Operation; Wrong Technic; Ligaments Brought Through Broad Ligaments Too Low.

thread which was used. The uterus was badly diseased. A supravaginal hysterectomy was performed at the second operation.

The second failure occurred in case No. 52 (married four years, sterile). Baldy-Webster performed with perfect result. Patient became pregnant two and one-half years later, and was confined normally; but the uterus did not undergo involution, and, as a result, dropped back in the original position. If this case had consulted a physician and had a properly fitted pessary been worn, it would have caused a return to the normal size and position. She contracted gonorrhœa three months later, and was operated upon by another surgeon.

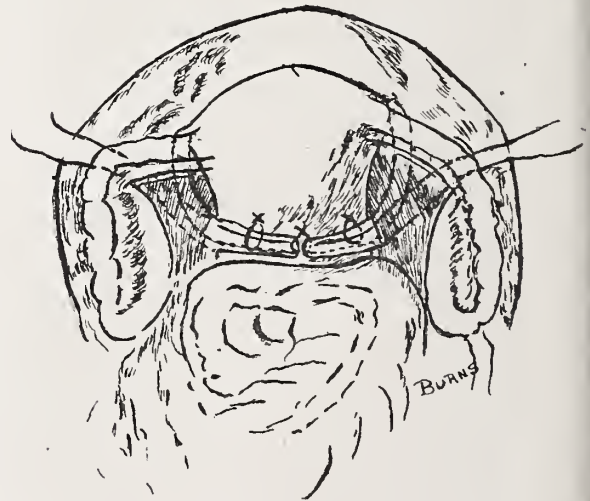
The third failure was No. 63, in which a curettement, perineorrhaphy, right salpingectomy, and right ovariectomy was performed with a posterior attachment of ligament on the right side, with a Webster's attachment on the left side. The ovary became cystic, the uterus dropped backward, and adhesions between it and other pelvic structures took place. A removal of the remaining ovary and uterus was performed about four and a half months later.

Case No. 79, with a previous history of an abortion, had a second abortion some time after

a Baldy-Webster. The uterus was up until after this abortion, but afterwards it dropped back. After using a pessary for about four months, it remained in position. Several months later she became pregnant again, and aborted; the uterus dropped back again. She wore a pessary for three months. The uterus has remained in position since (five months).

All of the retroversion operations are based upon Alexander's work of shortening the round ligaments; all have some merit, but some are better than others. It would be an endless undertaking to discuss the majority of these operations, but it would not be amiss to discuss briefly the operations most commonly performed—viz., Barrett, Baldy-Webster, Coffey, Alexander (modified), Gilliam, ventrofixation and ventrosuspension. The latter two operations have certain objections and restrictions which are well known to all.

The Gilliam is a popular operation; but I have had the misfortune to operate upon a patient who was operated upon by another surgeon a few months before, in which the Gilliam was performed with bad results. The intestines were looped and adherent to the right side, producing obstructions. The Gilliam, like other operations



(No. 4.)

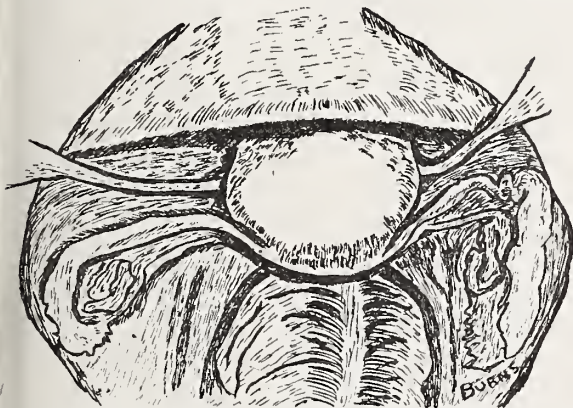
Baldy-Webster Operation; Wrong Technic; Ligaments Attached Too Low.

of somewhat similar technic, does make use of the supposed strong portion of the round ligaments.

The Coffey is not as good as the Baldy-Webster, because the uterus pulls constantly upon the ligaments, which are attached to the anterior sur-

face, instead of resting like a board in a rope of a swing. The Coffey will not elevate the ovaries in cases of prolapse as well as a Baldy-Webster.

The Baldy-Webster in carefully selected cases is a good operation, and I believe will give as



(No. 5.)

Baldy-Webster Operation; Uterus Enlarged and Ligaments Attached Too Low, Allowing Uterus to Topple Over.

good, if not better results than any other type of operation. The principal objection urged by some is the use of the supposed-to-be weak portion of the round ligaments.

The failures which I had I believe preventable by observing the following rules: Do not attach the ligaments too low down behind the body of the uterus (see pictures Nos. 4 and 5); if you do (especially if the uterus is enlarged), the uterus may topple over and have a worse condition present than the original.

Do not use the Baldy-Webster in an enlarged, soft, flabby uterus. Attach your ligaments high to the posterior surface of the uterus; but, before doing so, do not puncture the broad ligament too low (see picture No. 3); if you do, you will have them pulling the fundus and body backward.

Polak has given some of the contraindications for the Baldy-Webster. Other operations, especially the Barrett, are better where you have a sagging of the anterior and posterior vaginal walls, the bladder and urethra—a slight giving away of the pelvic diaphragm.

Cut your sutures close, if linen or silk is used in the Baldy-Webster, to prevent adhesions of the intestines and omentum. In a normal size uterus, without prolapse, properly performed, the Baldy-Webster is ideal.

You will notice from the report of cases that for a long time I performed the Barrett exclusively, later the Baldy-Webster exclusively; but

in the more recently operated you will find that they are almost equally divided. This change has been brought about by more experience and judgment in the selection of cases for certain types of operations.

If any of my Barretts have failed, I am not aware of them. In cases with a slight vaginal prolapse, a long ligament, or if the uterus is enlarged, soft, and flabby, a Barrett is the best operation, in my judgment. In performing a Barrett, where the ligaments are too short, the uterus might be brought up in contact with the peritoneum, and have a ligament formed which could cause an obstruction, as in a fixation or suspension operation.

In conclusion, I would advise the more frequent examination of women after labors, miscarriages, and abortions, and the more frequent use of the pessary in proper cases.

Undoubtedly a great many retrodisplacements following abortions, miscarriages, and labors can be prevented by repairing lacerations; but in those cases without lacerations and pelvic inflammation the use of the pessary will correct and prevent future trouble and operations.

I believe there is some good in all of the various types of operations devised for the correction



(No. 6.)

Uterus Enlarged, Toppled Over After Baldy-Webster Operation, With Above Results.

of the uterus, some, however, having dangers and not so good as others. The Webster or Baldy-Webster is an ideal operation with the objections above enumerated ruled out. The Barrett, or sometimes called the "Mayo," is useful in the majority of cases, and the Alexander-Adams in a very few carefully selected cases.

DISCUSSION ON THE PAPER OF DR. BLACK.

DR. W. F. CLARY, Memphis: This question of retro-displacements of the uterus confronts us all, and we see a large number of them in women who have borne children and who suffer with lacerations.

There is one point which was brought out by Dr. Black which I wish to dwell upon a little further—that in a great many of these cases, if the laceration is repaired, the ligaments regain their proper tone without any intra-abdominal operation. Weakness of the pelvic floor keeps the patient nervous. She has lack of appetite and sleeplessness; she gets into a run-down condition; but when these repairs are made, very frequently patients recover without any intra-abdominal operation.

The operation which Dr. Black has done is undoubtedly the correct one for the class of cases he has described. Such an operation is much more preferable than the old process of attaching the uterus firmly to the abdominal wall. The ligaments should be shortened and attached to the uterus in the way Dr. Black has referred to.

DR. ROBERT CALDWELL, Nashville: This is an interesting paper that Dr. Black has given us, and the subject is one that always elicits considerable discussion; and as he has suggested in his paper with reference to the Webster-Baldy operation, theoretically it is wrong, because it utilizes the anterior or the weaker portion of the round ligaments. I think here some of our theories are disproven by practice, and the Webster-Baldy procedure has proven to be a most satisfactory procedure in a large per cent of cases of the condition that the essayist has described.

Personally, I have done the Webster-Baldy operation with success in complete procidentia in young women—that is, women still in the childbearing period. We do not see these cases often. I recall having had one case five years ago of a woman, thirty years of age, who had considerable laceration with complete procidentia. With repair of the pelvic floor and the Webster-Baldy operation, she has had complete relief for five years; so that I think in the more aggravated forms of condition the Doctor speaks of—namely, procidentia in young women in the childbearing age—the operation he has described is justified. I do not mean to say that we will cure all these cases of procidentia by the Webster-Baldy operation, but we will cure a sufficient number of them to justify an attempt to cure them by this method.

After the childbearing period I would not attempt the Webster-Baldy operation; but I rise particularly to say a word or two with reference to the practical side of the Webster-Baldy operation and to say that in my hands it has been satisfactory, and some of the points of failure brought out by Dr. Black are excellent and are well taken. I think that some of our failures will be due to errors in technic rather than to the operation itself.

DR. W. T. BLACK, Memphis (closing): With reference to the remarks of Dr. Caldwell, I have only done the Webster-Baldy operation for procidentia once, and that was in a young woman. I did it because she re-

fused to have anything further done. As a rule, that operation will not hold up the uterus in cases of procidentia. The point I want to make is that this Baldy operation is very much lauded by some and by others condemned. I think it requires considerable judgment in selecting the cases for the Baldy operation; and if it is performed properly, it is successful, and is an ideal operation in the majority of cases.

It was my desire also to bring out the point of the more frequent use of the pessary. That is a thing we have overlooked. It was used a great deal formerly, but in the last few years it has not been used so much. I am using the pessary more and more all the time, and I believe lots of good can be done with it in these cases of recent standing.

TUMORS OF THE FEMALE BREAST.*

By J. L. McGEHEE, JR., M.D., F.A.C.S.,

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A discussion of tumors of the female breast necessarily implies a discussion of one of the great problems confronting us to-day—viz., the cancer problem.

I wish to take up that phase which every one believes at this time to be the most important one pertaining to the cancer question—precancerous conditions, their earlier recognition and subjection to operative procedure.

If we are going to operate only on cases of cancer of the breast which can be diagnosed clinically, then we shall never get very much better results than were secured twenty-five or thirty years ago.

Murphy, as late as February, 1916, states that “the ultimate mortality of cancer of the breast is just as bad to-day as it was thirty-five years ago, if not worse than it was then.”

The solution of the problem and relief does not lie in improvement in operative technic. It seems that in the light of present knowledge we have attained to the *c plus ultra* technically, when we consider the modern operation.

A résumé of the development of the operation from the time of the elder Gross and his contemporary, Agnew, to the present time of the operation of Murphy, Halsted, Willie Meyer, and Styles, would be of historical interest, but would take us too far afield. From such a résumé, how-

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ever, we would glean the melancholy fact that with improvement in technic—an improvement based on anatomical and pathological knowledge—there has been no corresponding improvement in the ultimate mortality statistics, because the improved operation has not changed the character of the disease.

Where, then, are we to seek the solution of the problem and ultimately hope for relief?

Our hope for the future lies in the education of women and the profession for earlier diagnosis and earlier surgical attack. Bloodgood, in a preliminary report before the Western Surgical Association, in December, 1915, stated that, "as a result of the propaganda for education, the statistics of the Johns Hopkins Hospital were so favorable that it seems almost just to state that education of women and the profession can cure cancer of the breast."

The question of educating the public in prophylactic measures imposes a grave responsibility on our profession. We should recognize it as a most fertile field for service.

Specifically, women should be taught to regard all tumors or lumps in the breast as potential cancers.

They should be taught to look with suspicion on all soreness or irritating discharges from the nipple.

They should know that cancer of the breast continues to reap a colossal mortality.

They should have indelibly impressed on their minds the fact that their only hope lies in operative procedure, and that the *time* of the operation, rather than the *extent* of the operation, controls the result.

They should be taught that at the first warning that something is wrong in the mammary gland to consult the physician—the physician who will give prompt diagnosis rather than treatment. Teach her that it is diagnosis she wants first, above everything else.

Impress her with the tragedy of procrastination.

Of equal importance as the education of women is the education of their physicians in the early recognition of these lesions and in the importance of taking positive action toward cure while the lesion is still in the initial stage.

I must say frankly that the blame for delay by no means rests entirely with the people; for it is surprising what a large number of these cases

come seeking relief weeks, months, and sometimes a year or two after having consulted a physician, who, not recognizing the warning signs, did not advise that a diagnosis be made, but dismissed the unfortunate victim with a prescription for a liniment or a plaster and the comforting advice that everything would come all right in time.

This delay, I believe, is due to a lack of well-grounded, definite ideas on the part of the physician as to the ultimate termination of lesions of the female breast.

What are the early warning signs which should arouse the woman to go posthaste seeking advice of her physician? Pain; lump; hardened areas, diffuse or ill defined; discharge—serous, bloody, or milky; and eczema about the nipple.

Retraction of the nipple, dimpling of the skin, glandular induration and ulceration—all late or comparatively late signs of malignancy—render the diagnosis certain, and the prognosis also.

Allow me to briefly consider the diagnostic significance of these early warning signs. Pain does not speak for cancer. Cancer rarely gives any pain during the first year of its existence. I wish to impress upon you that fact and to emphasize it as strongly as possible, because nearly all textbooks speak of cancer as a painful disease. Of course it is in the latter stages, when ulceration occurs and when adhesions to the skin and to the costal wall take place; but in the early stages of cancer it is absolutely painless. Pain, however, is characteristic of certain forms of cysts, benign and malignant; but the one condition which I have observed as most constantly characterized by pain, in which pain is a prominent symptom, is *Mastitis Chronica Fibrosa*, also spoken of as the disease of Reclus and Abnormal Involution. It is a fibrous and glanular hyperplasia, with retention cysts. The hyperplasia is the initial stage; and, as a result of pressure, cysts follow.

The late Dr. Rodman considered it more common than benign neoplasms of the breast. It has been my fortune within the last few months to observe three cases. The most pronounced symptom in these cases was pain. The pain was almost constant, and markedly increased at the menstrual period. On palpation of the breast, pain was generally increased, and some areas were much more painful than others. The amount of pain seemed to be greatly out of proportion to the necessary pressure incident to the

palpation. Physically, the breasts are characterized by a well-defined resistance imparted to the examining hand.

Chronic fibrous mastitis must be considered, at best, a precancerous condition. Greenaugh and Simmons found in their series that 10 per cent showed carcinomatous degeneration. Dr. Warren, of Boston, reported 13 per cent of his cases malignant. All the cases in the University Hospital, of Philadelphia, reviewed by Speese, showed 25 per cent of them carcinomatous. The German Lertel states that 25 per cent of these cases are carcinomatous. Dr. Rodman found 21.5-10 per cent of his cases at the time of operation to be carcinomatous. So practically one in four is malignant at the time of seeking relief.

My three cases were found to be nonmalignant.

All lumps in the breast should be considered potential cancers until proven otherwise at time of operation. The mere presence of a lump or knot in the breast is sufficient evidence to advise exploration and examination. Discharges from the nipple—bloody, serous, or milky (from the nonlactating breast)—are signs calling for the most prompt and searching study.

Discharges of a milky character (from nonlactating breasts) usually speak for cysts, benign or malignant. Discharges of blood from the nipple speak either for cancer or papillomatous cysts. A serous discharge from the nipple, small in amount, which produces an irritating effect on the skin of the nipple, causing the so-called "eczema," means cancer—Paget's cancer—a cancer of the milk duct—and the discharge coming from within excoriates the skin of the nipple.

When you consider that a case of Paget's disease, with only this little perimammillary irritation as its manifestation, has finally over 90 per cent cancer mortality, you can appreciate the urgent necessity for the most earnest and most prompt radical procedure.

Lesions of the female breast that we designate as "precancerous" must necessarily, in point of time, be classified as "benign." The term "precancerous" carries with it the idea that these lesions at a certain period are benign and at a later period will become cancerous. There are, of course, certain lesions that are cancerous *ab initio*.

Theoretically, there are two classes—benign and malignant. Practically, because of the limitations of our knowledge, we are forced to rec-

ognize three classes—viz., benign, border line, and malignant.

The use of the term "border line" is a confession of our ignorance of the histogenesis of cancer, but this honest confession is good for the afflicted host. It is always safe to know and confess our limitations.

Of course, on the one hand, we wish to avoid the complete operation when the lesion is benign, and, on the other hand, the almost fatal mistake of the incomplete operation when the lesion is malignant. It seems to be agreed that in case of doubt as to the question of benignancy or malignancy, the idea of malignancy should prevail, and that we should give our patients the benefit of the radical procedure.

This, as a working basis, will probably result in a certain per cent of the border-line cases being unnecessarily subjected to the radical operation. However, I believe that we would all prefer, and that our patients will prefer, the slightly mutilating operation to the danger of an incomplete removal of a malignant tumor.

Dr. Joseph C. Bloodgood makes the unequivocal assertion that "the relative proportion of benign lesions of the breast is steadily changing, and the percentage of benign lesions is on the increase." "From 1889 to 1900 the per cent of benign lesions was 32; from 1900 to 1910, 41; and from 1910 to 1915, 54. This increase is associated with a shorter duration of the disease—that is, women are seeking advice earlier." And, what is just as important, they are being correctly advised. Advised to do what? To have a diagnosis made at the earliest possible moment—a diagnosis made on the operating table, based on microscopic findings, the therapeutics being predicated on the combined findings of the well-trained surgeon and the skilled pathologist with his frozen sections. By this method the diagnosis is available in from six to twelve minutes, and the indications are clear for the performance of an operation based on pathology.

When diagnostic resort is had to the scalpel, it must not be laid aside until the nature of the lesion is known and the indications have been fulfilled. Once the aberrant cancer cell is attacked in its favorite lair, there can be no turning back, no delay for several days waiting for the pathologist's report from the more accurate serial sections. The lymphatic avenues of escape are too numerous to expect the malignant invaders to

lie quiescent in the mammary gland after preliminary assault, while you leisurely make up your mind to further attack. After such a period of waiting, the malignant hosts' will, in all probability, have escaped from the outer works and be safely ensconced within their inner fortifications, the mediastinal glands, the bones, and the liver, from which they cannot be dislodged. The battle will have been lost. And why? Because of poor generalship.

DISCUSSION ON THE PAPER OF DR. McGEHEE.

DR. W. A. BRYAN, Nashville: I think this paper of Dr. McGehee's is very much worth while from the standpoint of the patient first. We have learned a lot of things about cancer that are not true, and we have got to get rid of a lot of false ideas we were taught in our medical schools and learn the facts about it.

The first thing about cancer that I want to say is this, and I am excluding from consideration those cancers on the surface that can be seen, such as skin cancers, and those of the mucous membrane of the mouth particularly: The more certain the diagnosis of any hidden cancer, the worse the prognosis. That goes without saying. Let us take cancer of the stomach. A patient comes in with cancer of the stomach. You can make a section. If you make a diagnosis of cancer, you can make a prognosis to the effect that the patient will die, no matter what you do for him. Let us take cancer of the breast. You can say positively, "You have cancer of the breast." The more positive you make that statement, the more certain are you to lose the patient now or later.

The next point is the method of diagnosis. We have been taught a lot of symptoms in medical schools and signs of cancer. One is the sign of pain. Pain is emphasized as an important symptom to men and women who are trying to keep posted about the recognition of the disease. We were taught a lot of differential diagnostic points, about fourteen in all. We were taught, for instance, to differentiate between cancer and sarcoma. There are only about six or seven of these points that are of value if we analyze them in the light of our present knowledge. One great point is that malignant tumors produce pain and benign tumors do not produce pain. The truth of the matter is that if you study your cases from the beginning up, you will find neither a malignant nor benign tumor produces pain; and when pain is produced by any tumor, whether it be benign or malignant, it is due to certain things happening in the tumor in connection with the nerve supply of the part, so that pain has nothing to do with the diagnosis of benignancy or malignancy.

Another point. We have been taught that sarcoma occurs in people under thirty. You may remember the old differentiation that sarcoma occurs in people under thirty; that carcinoma occurs any time from the time

of the unborn fetus up to eighty or one hundred years if we live that long. The average time of sarcoma of the breast is away beyond thirty. That sign is absolutely worthless.

Now there are two methods of diagnosis of cancer of the breast. First, the clinical symptoms and signs; and, second, the microscopic diagnosis. Patients come to us and say: "Doctor, I have a sore or lump in my breast; I discovered it while taking a bath last Saturday night, and I came to find out what you think about it." That is characteristic of some of the patients that come from Middle Tennessee. "Well," you say, "there is no lymph node involvement; there is no retraction of the nipple; there is no pain, and there is no metastasis; there is no ulceration. I believe I would go home and put iodine on that and treat it faithfully with iodine; and if iodine does not do any good, try antiphlogistine." And finally they do something else, and we are at sea. These patients think that they have a growth. The growth of cancer, if it is cancer, depends on its blood supply; and, as a matter of fact, what we tell a patient is to go home, if it is cancer, and stimulate this growth, so that it will invade the mammary fascia; it will invade the pectoralis muscle; it will involve the lymph nodes; and then later the patient returns to us in a hopeless condition, and we tell her positively then it is cancer. You will tell that patient also, if you tell the truth, it is a hopeless condition, and rendered so by the recommendation of the doctor who applied certain things that were absolutely of no value in cases of cancer.

Another method of making the diagnosis is by the microscope. Bloodgood is teaching, every pathologist and surgeon is teaching, that the way to make a diagnosis of cancer is by the use of the microscope. I would not underrate the value of the clinical or physical signs; but given a case you are uncertain about, why wait?

I would like to call your attention to the frozen section, because patients ask questions about certain points in connection with our work. Sometimes we say we will cut into the growth and remove a piece of it for examination. That is bad business always. In the smaller growths the thing to do is to take out one growth, if it is single, and have it examined by frozen section if you want to. Remember, however, that frozen-section examinations in the hands of the best pathologists are not any more reliable than the best microscopic examinations. If a pathologist can say to you positively and unquestionably at the time that this thing is malignant, then you can go ahead with your correct treatment. If your pathologist says, "I do not find any malignancy, but I do not want you to take that as my final judgment; I will use a slow method and report to you again, and decide after many examinations by a slow process whether it is cancer or not," you will have something to go by. If it is cancer, you can proceed and do your complete work.

DR. A. L. RULE, Knoxville: It seems from the discussion on this paper that the cancer problem is, indeed, a very serious one. If metastasis has already set in, it is too late to operate. Then, it seems to me, it resolves itself into purely an educational movement.

Then the question: Who are the proper ones to bring about this movement? I do not believe in active publicity on the part of physicians; but certainly there is no set of people more capable of advising the ignorant public on these important questions, and I believe the medical profession ought, at least, call meetings in different sections of the country, city, or wherever they may be, and advise our women of all of these conditions, not only present in the breast, but the uterus as well; and in that way we will arouse the curiosity of the women, and many of them will present themselves for examination much earlier than they do at the present time.

DR. W. T. BLACK, Memphis: Undoubtedly the biggest mistake we, as physicians, make is to advise patients to wait when they have a lump in the breast. When we consider that 85 per cent of the tumors of the breast in women are malignant when they consult us, we must realize the seriousness of the situation. Every lump in the breast of a woman should be removed, it matters not how small it is, and it should be submitted to a microscopic examination. I think it is due the patient in every case that we should have this microscopic examination made to enable us to tell the patient that she has a benign or malignant growth. The treatment largely depends upon whether it is malignant or not—that is, as regards the removal of the breast and lymphatics; but I think we make a mistake by removing too often small lumps in the breast when we have simply benign growths to deal with. It is surgically a mistake to remove the breast in young girls and young women when we have no means of proving positively it is malignant, and it should be considered a crime to remove any lump from the breast without submitting it to this examination. If you are unable to have this examination made, although there are plenty of pathologists scattered all over the country, it is better for you to remove the breast and be on the safe side.

DR. DEERING J. ROBERTS, Nashville: About a year ago the American Association for the Prevention of Cancer issued a circular letter to all medical periodical publications in the United States, requesting them to devote a large part of their issues, whether weekly or monthly, to the subject of cancer; and of the exchanges that come to my table, over thirty commented upon that important suggestion. I read them carefully and closely, and there was not a single man in that large list, each journal containing from three to five or more articles on the subject, who did not demand, recommend, and insist upon early operation in cancer as the only means of reducing the mortality. There was unanimity of sentiment, so much so that I hoped at that time we would never hear this matter discussed any more, because it would not be necessary; that early operation would be an axiom in medical and surgical science. Yet the debate regarding operation is still going on. I hold to the idea that a tumor of any character, I care not how benign it is, that invades the sacred precincts of the female breast should be removed, if for nothing else than the cosmetic effect. The simplest tumor, if removed from the mammary gland of a young or old woman, is

very little more of a surgical operation under aseptic surgery than paring the finger nails. It does no harm. What does delay do? It puts cancer alongside the captains of the men of death. It is a disease in which delay is particularly dangerous. If you operate upon a benign tumor and take it away, you have taken away a fertile soil in which cancer cells may be implanted. You sterilize it for the time being, so far as cancer is concerned. Furthermore, we know that any benign tumor may take on cancerous degeneration. Cancer may develop in any healthy tissue of the body. The more vascular the tissue, the more rapid the growth; and there is no more fertile soil for the development of cancer than the female breast.

I will not take up your time longer, except to say this: Standing in the position of a general practitioner for many, many years and as a medical teacher for well-nigh onto forty years, giving you the consensus of opinion as coming to-day from the leading men of the profession, this thing should be laid down as an axiom: Whenever a tumor of any character invades the female breast, remove it. The earlier, the better.

DR. WILLIAM BRITT BURNS, Memphis: The previous speakers have covered the ground so well that there is very little left for me to say. However, I want to make this remark: That since the education of the public on the cancer question, women are no longer so hard to persuade to undergo the proper operative procedure for cancer as they were formerly; and I think Dr. McGehee is perfectly right in assuming that all nodules of the breast should be considered precancerous. I believe there should be some definite way of making an operative or table diagnosis, whether it be by frozen section or not. Whether the frozen-section method is sufficiently accurate for us to rely on it is a question that might be considered.

We have, of course, many benign tumors of the breast; and on that account a great many think that the breast should not be sacrificed. If the frozen-section method is not sufficiently accurate, then the method spoken of by Dr. Bryan should be considered satisfactory; and I do not believe any sensible woman would object to a secondary operation. I believe the whole tumor should be removed, and not simply cut into it. There are errors committed by pathologists, as well as by most of us; and after carefully examining more than one or several serial sections, even then the diagnosis may be wrong. I speak of this quite feelingly, because recently a buccal tumor was submitted to a pathologist for a pathologic diagnosis. The tumor had been removed, and gave all the clinical evidence of sarcoma, which returned on three occasions, and each time reports from the pathologist showed round-cell sarcoma of a very malignant type. I had taken the care to examine the teeth in this particular case, and I do not admit this was an infection from the teeth; but some one suggested that a picture be made of the teeth of this patient, and it was found she had granulomata at the roots of two teeth. These two teeth were removed, and the patient says the abscess healed as if by magic. I do not know whether she was cured of sarcoma by the

last operation or not. This is apropos of the question of errors in diagnosis by the pathologist.

I do not remember to have ever removed a tumor of the breast that did not show scirrhus cancer. I have been fortunate enough to have operated on tumors of the breast in which the diagnosis, both clinical and pathological, was correct.

Some years ago I remember to have operated on every case that came to me; and, as a rule, I have had very little or no trouble in persuading women with a lump in the breast to have it removed. I recall one patient who had a milk cyst. I postponed operating on her for five years, at the end of which time she returned with the tumor greatly enlarged. I was prepared to make a diagnosis by frozen section; but in removing the tumor, it burst and proved to be a milk cyst.

DR. H. M. TIGERT, Nashville: At the present time the cancer problem is solely an educational one—first, with the profession; and, second, with the general public. I believe charity should begin at home. So far as doctors are concerned, there are no symptoms of cancer of the breast; nor is there any clinical evidence, except that of tumor. It was recognized years ago that a great many tumors of the breast are malignant. It has been shown that in women past thirty-five years of age, with tumors of the breast, thirteen out of fourteen are either malignant or will become so. The sooner we divest our minds of the idea that such symptoms as immobility, glandular enlargement, retraction of the nipple, and pain are symptoms of cancer, the sooner this problem will be met. Women should be taught the great importance of immediately seeking medical advice upon the advent of a tumor in the breast.

The management of these cases is comparatively simple when presented early. Operation should be undertaken only in a fully equipped hospital, and the services of a competent pathologist must be available. The patient should be prepared for the radical operation. The tumor is removed *in toto*, and the cut edges of the resulting wound sealed with the cautery, while the pathologist subjects the specimen to examination by the frozen-section method. If the pathologist reports the tumor malignant or suspicious, the complete operation should be done. It is true that this practice may result in an occasional loss of a breast, where subsequent microscopic examination of the specimen shows the pathologist to have been in error; but this should be negligible, in view of the benefits that accrue from early and radical operation.

Metastasis usually occurs first in the axilla. If the disease extends above the clavicle, it is worse. If the pathological process extends into the cervical glands, it is almost hopeless. If it extends to the mediastinum, the case is hopeless.

In closing, the one point I wish to emphasize is that there are no symptoms and signs of cancer of the breast except the tumor itself, so far as the surgeon is concerned.

DR. L. W. HASKELL, Memphis: This is one of the most timely questions that can be brought before the association for consideration. In the first place, every

general practitioner cannot be a specialist so as to make a diagnosis of tumor of the breast. There is no branch of medicine of which I know which requires more expert knowledge than the diagnosis and treatment of tumors of the breast. It is the duty of the family physician to refer the case to an expert and let the expert pass judgment on what should be done.

There are three distinct operations which may be done—one, the removal of the tumor. This is the operation that should be done in all cases of women with distinctly encapsulated benign tumors of the breast.

I must take exception to the position taken that 80 per cent of these tumors are malignant. I think it has been shown by Bloodgood that it is only 50 per cent. If we remove the breast in all of these cases of tumors, then we necessarily remove 50 per cent of benign breasts. One has got to become accurate in clinical diagnosis, and there is such a thing as accuracy in clinical diagnosis in tumors of the breast; and if the surgeon is accurate in his gross pathology, he may do at the time that which is necessary to be done. This is not as difficult a problem as it is ordinarily considered, because the class of cases that give the greatest amount of pathology are those of so-called "cystic mastitis," "Reclus' disease," or, as Bloodgood terms it, "senile parenchymatous hypertrophy." With that condition we have a diffuse induration, with little nodular areas. They may be as small as No. 8 shot or larger than that, because the normal acinous breast feels that large. In those cases I think there is but one thing to do, and that is to remove the breast. I have seen a number of resections of the breast for chronic cystic mastitis. If that is referred to the pathologist for examination, he may strike a portion that is not malignant, or the surgeon may resect a portion that is not malignant; and the patient gets a diagnosis from the pathologist at the end of a week or ten days of a benign tumor, and in six months' time it is malignant. If it is not malignant, there is a recurrence, because these cases of cystic mastitis tend to recur or start up in other portions of the breast rather than recur; and for that reason, if we make a diagnosis of that condition, the entire breast should be removed.

The question of malignant chronic cystic mastitis is one of time. A patient comes to you as soon as she notices it and says it causes pain. At that time the condition may be benign. If she waits long enough, it may become malignant. All surgeons will agree that cases come to them for consultation with a lump in the breast that has been present for four or five years; that it has gradually been getting larger and the other breast becoming involved; but the patient says that this breast with a lump in it during the past year has been growing rapidly. The longer these cases wait for the surgeon, the more apt the tumor is to be malignant.

The surgeon in his education should keep abreast of the times, and particularly in the matter of diagnosis. Bloodgood, who is one of our greatest authorities on breast tumors in this country, admits that in from 10 to 20 per cent of the cases he cannot make the diagnosis either at the time of operation or with a frozen section; and in the doubtful cases Bloodgood never allows the

patient to go to the frozen-section stage. In a number of doubtful cases he not only removes the breast, but removes the axilla and the lymph nodes. The removal of the breast in a malignant condition, without doing a complete operation, is a reflection on the surgeon.

PRODUCTION OF SEXUAL STERILITY FROM A GYNECOLOGIC STANDPOINT.*

BY GEORGE R. WEST, M.D., F.A.C.S.

A consideration of the production of sterility in the childbearing woman is always a study of paramount importance and of grave solicitude to the attending gynecologist. There are many affections and conditions that would seem at once to interdict the occurrence of pregnancy, and it is in these selected cases where foresight and discrimination are so essentially required, and where, too often—alas!—especially among *occasional* gynecologists, temerity rather than timidity is the blunder of the operator.

The old Latin quotation, "The times have changed, and we have changed with them," finds a fitting counterpart in one conspicuous gynecologic operation—namely, castration. Late in the sixties the noted gynecologist, Robert Battey, of Rome, Ga., promulgated the theory and carried into execution the castration of women for a score of maladies that baffled all attempts at treatment or amelioration. The results of his labors were variously interpreted; but the balance of opinion was unalterably opposed to this unsexing of women, many declaring the operation too radical, or too frequently resorted to by inexperienced operators, or unnecessarily severe, and in not a few instances leaving the woman a nervous and a physical wreck.

Fifty years ago no one ever dreamed of the existence of internal secretions; indeed, twenty years ago the ovary was merely considered from a generative standpoint, and all of the anatomies of that rather recent date mention the pituitary and thyroid glands as enigmatic organs.

Some years since, scientific investigators, chief among whom was Claude Bernard, discovered the dual nature of the ovary. Not only this, but that there are, in all probability, two ovarian hormones—one produced by the interstitial

stroma of the gland, probably regulating menstruation and bodily nutrition generally. Again, the corpus luteum elaborates a hormone, possibly an antagonist of the ovarian hormone, and which is supposed to inhibit ovulation between the œstrus periods and ovulation during pregnancy. Without attempting any detailed study of internal secretions, these few words will suffice to show the immense importance of these secretions to the female economy, and to emphasize the fact that it is far better for a woman to retain her ovaries than to have them as a proud exhibit in a pathologist's pickling jar.

As was just remarked, physicians around the seventies and eighties and nineties knew nothing of these studies, and but little more of the true nature of arterial pressure as we understand it to-day. It was not until 1913 that Tandler and Grosz announced in Berlin the indisputable existence of ovarian secretions, and urged upon the medical profession the unwisdom of castration in many instances, asserting that the ovaries are reproductive organs, and also organs elaborating hormones, and that the distinction between these two functions has an anatomical basis in the local and histological differences between the generative and the interstitial cells, and that the normal nervous system and normal mentality cannot be maintained without the adequate functioning of the system of glands of internal secretion.

The consideration of arterial tension is another very important factor in the domain of medical gynecology, and it is here where Battey made a rather natural blunder of considering the elevation of pressure observable at each recurring menstrual period as solely related to the *sexual* system, instead of its systemic nature, thus accounting for a large number of nerve manifestations so often evidenced at these critical periods.

It is for these reasons that castration finds little favor to-day, when less formidable procedures may be invoked with far happier results. Few gynecologists would now subscribe to this radical innovation; rather would they attempt in such cases the production of an amenorrhea to relieve the exalted tension that might engender a series of nervous symptoms; or where for any reason further pregnancies would be contraindicated, be these on account of impaired health, contracted pelvis, inflammatory affections, etc., they would more scientifically resort to the production of sterility.

*Read before the Chattanooga Academy of Medicine and Hamilton County Medical Society, June, 1916.

In this connection it seems pertinent to remark that sterilization would be a desideratum in the hopelessly insane, in the innate criminal, and in the feeble-minded. Statisticians believe the Anglo-Saxon race doomed to the fate of the Greeks and Romans; especially do they refer to the United States, with its influx of poor, of vicious, and of the feeble-minded from many strange lands; *for insanity is a product of advancing civilization*. The more complicated the problems of life, the greater will be the number of those who will fail to adapt themselves to the increasing complexity of their environment.

It is for these reasons that sterility, and not castration, forms so important a study in questions of an eugenic nature. In some states laws have been enacted and imposed upon the statute books approving sterilization of those confined in prisons, insane asylums, almshouses, and other eleemosynary institutions.

Elaborate laws, planned by legal luminaries, have been adopted by a dozen states; but their results will form no conclusive study, because different means are advised to accomplish the same end. Indiana, Washington, and Kansas advise any type of operation so as to render the individual sterile; Connecticut demands oöphorectomy; Iowa and Michigan, salpingectomy; Nevada orders sterilization, but under no consideration castration.

Some of the states demand sterilization in cases of unreformed prostitutes, habitual drunkards, syphilitics, and in the epileptic the result of vicious inheritance. In some institutions sterility is urged for the latter and for the feeble-minded in support of the hypothesis that each is due to an absence of a protoplasmic factor that determines complete nervous development, and that persons belonging to these classes usually carry some wholly defective germ cells.

There is, however, a strong prejudice against many of the operative measures advised; and but recently the Department of Research of the Training School of Vineland, N. J., vehemently protested against these more radical means of sterilization, urging that in cases where sterilization might be demanded advantage be taken of the Röntgen rays, or that the patient be subjected to the action of radium.

Before discussing the most important part of our paper—namely, the methods and the results obtained from sterilization—a peculiar coinci-

dence has been noted both in this country and abroad, and that is the almost constant relation of some gynecologic-pathologic process to be found in association with mental affections. The subject has received careful thought from European physicians; and Schauta, in the hospitals of Vienna, and Schultze, of Jena, Germany, are convinced of the fact that sterilization and other gynecologic procedures are of immense benefit in those patients whose minds are apparently upon the very verge of hopeless ruin, and they urge the wisdom of examining every female admitted into the wards of the insane departments for some gynecologic defect or pathologic condition of the genital or reproductive organs.

In this country the subject has received much thought, and we need but mention the investigations of Taussig¹ but a few years since. In the St. Louis City Sanitarium in 1912, of 537 inmates, 252 had more or less serious gynecologic conditions. In dementia precox alone 50 per cent of the sufferers had gynecologic affections, and Taussig arrived at the following conclusions:

1. Frequency of gynecologic disease in maniac-depressive insanity.
2. The large proportion of chronic inflammatory conditions of the genital tract.
3. Mental recovery following operation by the gynecologist.

Whether to prevent obstetric mishaps, or to interdict the occurrence of pregnancy because of the woman's ill health, or deformity of the pelvis, or for the prevention of procreation from eugenic or other reasons, as has been previously stated, sterilization would appear to be the operation of choice, and the logical point of attack in an operation would naturally be the Fallopian tubes. Oöphorectomy would abolish ovarian internal secretion, too often accentuating rather than relieving the long chain of nerve manifestations.

Through appropriate methods of sterilization about to be described, we have a means of eliminating the generative function, while preserving the interstitial cells, both morphologically and in their power of internal secretion.

For the purpose of securing sterility the following procedures have been most commonly invoked: 1. Ligation of the tubes. 2. Section and resection of the tubes between two ligatures. 3. Resection of the tubes between two ligatures, with burial of the uterine end. 4. Section by means of cautery. 5. Bilateral salpingectomy.

6. Resection of the interstitial canal by removal of a wedge-shape piece of uterine cornu.

1. *Ligation of the Tubes.*—This method has not yielded satisfactory results at the hands of most gynecologists, and was first experimentally performed by Kossmann in 1875. Just a decade has passed since many able obstetricians here and abroad resorted to this means of sterilizing by tying the tubes with silk or with catgut; but the results of these efforts have been unavailing. In a very large number of instances the operation was undertaken to prevent future childbearing because of many and difficult labors. In a large proportion of these cases the uterus was fixed to the anterior abdominal wall and tubal ligation instituted. In almost every instance pregnancy followed.

2. *Section and Resection of the Tubes Between Two Ligatures.*—Impressed with the futility of single ligation, because complete atresia of the tubes could not possibly be attained in this way, Abel in 1899 reported a most interesting case, in which he sought to effect sterility by cutting the tube between two ligatures placed about the isthmus. A second Cesarean section being required upon a certain patient, Abel² doubly ligated the tubes with strong silk and cut between the ligatures. Three years later the patient again became pregnant. Another operation was demanded, and the tubes were found to be united, and one of them was patent throughout the entire canal. The method had at one time many champions in Germany, but the results obtained have been as disappointing as with single ligation.

3. *Resection of the Tubes Between Two Ligatures, with Burial of the Uterine End.*—This procedure was first practiced by Ruhl,³ who cut the Fallopian tube between two ligatures, buried the uterine end in the broad ligament at the side of the uterus, and closed it over with peritoneum. At a subsequent operation he found the uterine end of the tube opening freely in the abdominal cavity. Another interesting case is reported from the famous clinic at Bonn, Germany,⁴ where a woman was undergoing a second Cesarean operation. The tubes were resected between double, nonabsorbable ligatures; the uterine stumps were buried and covered over with peritoneum. The following year she became pregnant, and a third Cesarean section was performed.

4. *Section of the Tubes by Means of Cau-*

tery.—This consists in cauterization of the cut ends of the tubes for the purpose of producing complete occlusion of the lumen. The Fallopian tube is first tied with double ligatures, cut between the ligatures, and the actual cautery is then applied to the sectioned surfaces. The procedure is absolutely ineffective.

5. *Bilateral Salpingectomy.*—Removal of both tubes, leaving a small stump at the uterine end, has not in the vast majority of cases assured sterility. An interesting case is that reported by Schmidt⁵ in an article entitled "Results Obtained in Resection of the Tubes." In one patient he found it necessary to remove one ovary and both tubes. He secured the uterine ends and ligated them with heavy silk, removed them, and left a stump on each side remain. A few years later the woman again became pregnant. In 1910 Pollak,⁶ of Brooklyn, reported three cases of pregnancy following salpingectomy. In one case sterility had been engendered through gonorrhœal infection of the husband. At the operation both tubes were removed, leaving a small stump at each cornu. A few years later the patient complained of intense abdominal pain, with uterine hemorrhage. Laparotomy was performed, and an interstitial pregnancy on the right side was revealed and excised.

6. *Resection of the Interstitial Canal by Removing a Wedge-Shape Piece of Uterine Cornu.*—This consists of a further step. The tubes are ligated near the uterine end, and a wedge-shape section of uterine cornu is excised containing part of the interstitial canal. The method, first advocated by Neumann,⁷ is to bring muscle and peritoneum together with sutures of catgut, covering the small raw area remaining with the peripheral portion of the tube. The method as thus outlined has given far greater assurance of success than all the other methods enumerated. Only recently Taussig⁸ has reported most excellent results by a method of combining the best features of several operators. He resects the interstitial portion of the tube, closes the uterine end with a double layer of sutures—first, of the uterine wall; second, of the round ligament. He then buries the proximal end of the cut tube at a distance from the uterine cornu between the layers of the broad ligament, and prevents the occurrence of hydrosalpinx by leaving the fimbriated end of the remaining portion of the tube open. Littig,⁹ after elaborate studies on the sub-

ject, speaks of the utter failure of ligation. He urges excision of all or part of the tube, with a deep, wedge-shape excision of the uterine horn, and the pars uterina of the tube, the uterine defect to be closed with a musculo-muscular and a sero-serous row of sutures. The anterior abdominal approach is the simplest, easiest, and safest.

Most elaborate have been the experimentations upon the lower animals, in the hope of solving the problem of sterility, by tubal procedures. While some of the results arrived at have been contradictory, the weight of the evidence has thus been tersely expressed by Fränkel:¹⁰ "Total extirpation of the tubes, including part of the uterine cornu and interstitial canal, is the only method to be recommended as offering any certainty in its results."

In this connection much interest attaches itself to the possible production of sterility through the agency of the invisible rays that proceed from a Röntgen ray tube, and even to a greater degree from radio-active substances, including especially radium and mesothorium. The study of these powerful agents upon hemorrhage in instances of rapidly growing fibromata of the uterus is perhaps the beginning of the mastery of a solution of the production of sterility in the human female; and the results attained by many investigators, notably Kelly,¹¹ of Baltimore, prove indisputably that in very many instances mild menopausal symptoms may develop, and that sterility can undoubtedly be obtained through this non-operative means.

A number of French and German physicians assert that they have brought about sterility through radio-active means, without the exhibition of menopausal symptoms. It has been abundantly proved by animal experimentation, as well as by clinical observation, that the X-rays and the penetrating rays of radium are capable of destroying the primordial follicles of the ovary and the spermatogenic cells of the testicle. As the former are concerned in menstruation, and which give rise to the corpus luteum, the rationale of the production of sterility becomes apparent. In place of the older method—i. e., by castration—for the relief of the intense nerve symptoms at each recurring monthly epoch, the application of the emanations of radium, for the purpose of producing an amenorrhea and thus relieving

the economy of the exalted arterial tension, has been tried with asserted excellent results.

In conclusion, we may epitomize the salient features as follows:

1. Castration is never the choice of operation for sterility, assuming a fairly normal condition of the ovaries.

2. The ovary plays a dual rôle—it is a reproductive organ and one elaborating a most necessary internal secretion.

3. Sterilization would seem to be a desideratum in many nervous conditions, depending upon and occurring at the menstrual periods.

4. Sterilization is the object aimed at by many States in treating for eugenic purposes the hopeless criminal, the habitual drunkard, the feeble-minded, the wanton libertine of the streets, etc.

5. It is the remedy par excellence where child-bearing *for any reason whatsoever* is contraindicated.

6. Sterilization is advised by many who see an intimate relation between gynecologic affections and conditions and various forms of insanity.

7. For the production of sterility, the Fallopian tubes are the logical points of attack. For the most effective result, the consensus of scientific opinion favors resection of the interstitial canal by the removal of a wedge-shape piece of uterine cornu, bringing muscle and peritoneum together, and covering the remaining small area with the peripheral portion of the tube. The same opinion obtains in animal experimentation.

8. It is a little early as yet to judge of the value of the X-rays and radio-active emanations for the production of sterility, but indications point strongly to the successful outcome of this line of therapy. It is interesting to note that radio-active applications, besides producing sterility, possess the power of bringing about an amenorrhea, relieving many nervous manifestations connected with the menstrual epoch.

¹Jour. Amer. Med. Ass'n, August 31, 1912.

²Central.f.Gynäk., 1899, p. 429.

³Central.f.Gynäk., 1898, p. 211.

⁴Central.f.Gynäk., 1905, p. 587.

⁵Central.f.Gynäk., 1897, p. 117.

⁶Am. Journ. Obstet., 1910, p. 676.

⁷Central.f.Gynäk., 1898, p. 641.

⁸Surg. Gyn. & Ob., 1913, xvi., p. 92.

⁹Ibid., 1812, xv., p. 514.

¹⁰Arch.f.Gynäk., 1899, p. 374.

¹¹J. A. M., Vol. LXIII., 1914, pp. 622-628.

It's worry, not work, which shortens life.

FOURTEEN CASES OF TRACHOMA OR GRANULAR LIDS TREATED WITH BACILLUS BULGARICUS.*

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TRACHOMA, GRANULAR LIDS, NAPOLEONIC OPHTHALMIA, EGYPTIAN OPHTHALMIA.

Trachoma is an inflammation of the conjunctiva distinguished by its chronic course and thickened conjunctiva due to hypertrophy of the normal papillæ, and characteristic granular bodies which give a more or less roughened appearance to the conjunctiva.

The disease is divided into three stages. The first stage consists of hypertrophy of the normal papillæ, giving to the conjunctiva a velvety appearance which may later show numerous granules beneath the surface of the conjunctiva, pushing up the surface, so that the Meibomian glands cannot be seen through the thickened membrane. This form is more clearly shown in the tarsal conjunctiva of the upper lid.

Second stage: The velvety appearance of the conjunctiva disappears in a measure, and the conjunctiva is shown thickened and studded with granules, but not, as they appear to be, on the surface, but beneath the conjunctival surface. These little bodies or granules are of a translucent, gelatinous character, and give, when the lids are drawn down, the appearance of frog's spawn or boiled grains of sago. The granules are found principally in the folds of transition, and often in such numbers that when the lids are drawn down the folds seem to be studded with granules arranged in rows, giving the appearance of a string of pearls. Over the tarsal area the granules are smaller and not so prominent; but they, too, push the conjunctiva up and appear as small yellow spots beneath the membrane. While either form may appear separately, as a rule, both are found at the same time and give rise to the third or mixed form, which is only an exaggerated condition of the other forms, with more or less distortion of the cartilages and margins of the lids, due to cicatricial contraction of the scar tissue.

The third stage is, therefore, only a more exaggerated condition of the other two forms.

Usually the whole conjunctiva is involved, and the granules are more numerous and larger, giving an overhanging or shelving appearance in many cases.

Trachoma was thought for a long time to have originated in Egypt, as very little was known of the disease in Europe until after the return of Napoleon's army from the conquest of Egypt. The disease was so prevalent among the soldiers of the army that a celebrated oculist of the day was sent to investigate the disease in the army. Unfortunately, he advised that all the affected soldiers be dismissed from the army. This was done; and, as a consequence, the dismissed soldiers returned to their respective homes, and thereby scattered the disease throughout Europe. The disease is found more extensively distributed in the East than in the West. The mountainous lands of Switzerland and Tyrol are said to be almost free from it; but, on the contrary, in the mountainous regions of our own country it is very prevalent, and especially in North Carolina, Tennessee, and Kentucky. Just why this should be the case is hard to say, unless from lack of care and ignorance of the proper sanitary measures with the people of those regions. In the lowlands of Holland, Belgium, Hungary, and the whole region along the Danube the disease is very prevalent. In Belgium it is said that one out of every five persons suffers with trachoma in one form or another. From the above we are not surprised that the disease was thought to have its origin in Egypt; but upon later investigation it was found that a writer by the name of Celsus gave a good description of the disease about the year A.D. 25, and made reference to some earlier Greek and Roman writers. Strange as it may seem, he advised that the lids be turned, the granules punctured, and their contents be squeezed out between finger nails. So we of this day in our treatment are not very far ahead of the time of Celsus, as it is the almost universal custom to open the granules and squeeze their contents out with fluted roller forceps instead of with the finger nails.

Etiology.—Trachoma is an infectious disease, and the secretion must be brought directly in contact with the conjunctiva before we can have infection take place by some direct means, such as the common use of wash basins, towels, and other articles of the toilet. By such means the disease is spread. Therefore we find it very common in

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barracks, schools, and orphan asylums, or where many people are crowded together and use articles of the toilet in common. It is very common among the poor, due to their being crowded together in insanitary surroundings. Like all infectious diseases, it is more prevalent during the winter months. There are many different theories as to the specific cause. Some claim a spore formation; others, that it is a plasmodium; while recently has come the suggestion of a filterable virus. You will readily see from what has been said that we are still in the dark; and though the consensus of opinion is that the disease is due to a specific germ, no such germ has as yet been isolated. The United States Government will not permit an immigrant with trachoma to land in this country, and a law has just recently passed Congress providing, in conjunction with the States, for the establishment of trachoma hospitals in all regions where trachoma is very prevalent, as in the mountains of North Carolina, Tennessee, and Kentucky.

I confidently predict that if this new treatment proves what the cases before you promise, the disease can be better and more economically and conveniently treated in the homes of the patients. Many of our cities and towns have passed laws to prevent the spread of trachoma, and will not permit children suffering with the disease to attend public schools. As you perhaps know, the Nashville schools will not allow children with trachoma to attend school unless they are under the care of a competent physician.

Symptoms.—The eye burns, feels gritty; the discharge varies from a small amount to a profuse discharge; photophobia and lachrymation are usually present; and there may be more or less ptosis due to swelling of the lids. Many cases are not even suspected until the individuals are examined for something else, as they have suffered with no inconvenience, and only by inspection is the diagnosis made. In the earlier cases, when the lids are drawn down, the conjunctiva appears velvety or studded with granules.

Differential Diagnosis.—From follicular conjunctivitis in the earlier stages the diagnosis is practically impossible. In fact, Fisch makes the statement that "no man, it matters not what his experience or ability, can make a positive diagnosis until after a lapse of time." Follicular conjunctivitis is of much shorter duration, and

may without treatment get well in about four to six weeks and leave no scar tissue, as in trachoma. There are some, however, who claim that they can make the diagnosis and the disease can be cured with no resulting scar tissue. This I very much doubt, and in such cases I would not hesitate to say to my patient that I had made a mistake in my diagnosis. The difficulty will be apparent if you will examine and compare photographs numbered: 1, "Follicular Conjunctivitis, with No Thickening of the Conjunctiva;" 2, "Follicular Trachoma (Johnson);" 3, "Everted Granular Lids;" 4, "Vernal Conjunctivitis, or Spring Catarrh." (Numbered by me.) The photographs are not made from the cases shown here, but are taken from standard works, as they are typical pictures of the different classes of disease in which it may be impossible to make an early diagnosis.

Spring Catarrh.—So called because of the fact that the disease occurs at the beginning of spring and lasts with more or less severity until late fall, to reoccur with the advent of spring. We usually have a circumcorneal inflammation or swelling, which is very hard and characteristic of spring catarrh. The treatment in these cases is palliative rather than curative. Our patient may be kept fairly comfortable by the proper treatment. There seems to be no tendency to any contagiousness, although you may have more than one case in the family, indicating that it is probably hereditary in some instances. But the history of the reoccurrence in the spring is sufficient to make the diagnosis. (See Figure 4, "Vernal Conjunctivitis, or Spring Catarrh;" Figure 2, "Follicular Trachoma (Johnson);" Figure 3, "Everted Granular Lids.")

Paranaud's Conjunctivitis.—Is a muco-purulent affection of the conjunctiva, with formation of very large granules pediculated in character, usually accompanied by preauricular, retro-maxillary, and cervical glandular enlargement, and may or may not go on to suppuration with chills and fever.

Tuberculosis.—The small follicles or glands soon break down and form little ulcers on the conjunctiva. The microscope will settle the diagnosis.

Sequellae-Pannus.—A new growth of blood vessels on the upper half of the cornea and conjunctiva, which is shown in Figure 6 ("Pannus Affecting Upper Half of Cornea"). The density

of the pannus does not always depend upon the severity of the disease. The pannus is claimed by some to be due to a direct infection, while the majority are disposed to believe it due to the constant friction and rubbing of the roughened

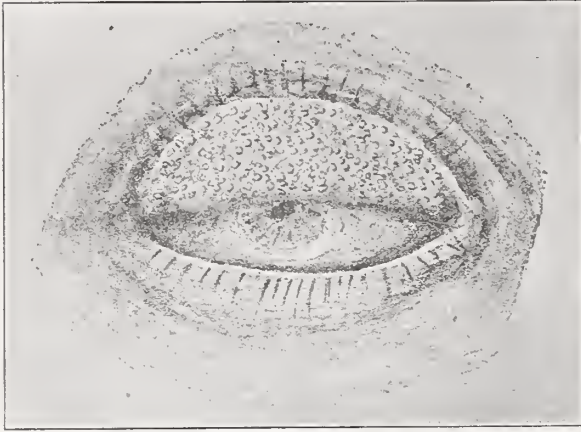


Figure 1. Follicular Conjunctivitis, with No Thickening of the Conjunctiva.

lid over the cornea, and that the pannus is the effort of nature to protect the cornea.

Ulcer of the Cornea.—Varying in severity, at times perforating the cornea, with loss of vision and subsequent atrophy or phthisis bulbi, or we may have a thinning of the cornea and internal pressure may produce conical cornea, necessitating enucleation of the eye, as in one of my cases who had the eye enucleated before entering the school. In this case she has on the other eye what is known as “pannus crassus”—that is to say, a fleshlike growth on the upper half of the cornea. These are the cases in which jequirity is used to destroy the pannus. In my case I could not use jequirity on account of the incarcerated iris in an old central ulcer of the cornea, for fear of perforation and loss of aqueous.

Trichiasis.—A turning in of the eyelashes, known as “wild hairs,” occurs usually in the third or worst form.

Ectropion—Or rolling out, usually of the lower lid, caused by contraction of the orbicularis muscle, rolling the lid away from the eyeball, with resulting epiphora (tears flowing over the face).

Symblepharon Posterior.—A cicatricial adhesion between the ball and the lid, interfering with the normal movements of the eye.

Treatment.—I shall only attempt to give an outline of the old treatment that has been almost universally used up to this time in order to draw

the contrast between the old and the new treatment. For many years nitrate of silver, bichloride of mercury, bluestone, alum, etc., have been used; but in recent years the albuminous salts of silver have been substituted for nitrate of silver. They are not so severe and penetrate the tissues, thereby being more effective.

Operative Treatment.—The lids are everted, the conjunctiva is scarified, and the contents of the granules are squeezed out with the Knapp fluted roller forceps. In addition to this, some do what is known as “grattage”—that is, after the use of the roller forceps they use a stiff bristle toothbrush to scrub the conjunctiva with a solution of bichloride of mercury, which necessarily sets up a violent inflammation, necessitating the use of cold applications to the inflamed lids. In recent years a few have used very fine sandpaper to sandpaper the conjunctiva and granules thoroughly. While I have not had the courage or the inclination to try this, it has been highly extolled by some. Jequirity is quite often used in fleshy forms of pannus, or what is known as “pannus crassus.” Before the introduction of jequirity a few men were bold enough in this class of cases to inoculate them with gonococci, and, in many instances, with good results, though there was very great danger of the loss of the eye. I think, however, that this will be sufficient to give you some idea of the problem we have been “up against” in the treatment of this disease and the desperate means that have been resorted to in some cases. The results of the treatment have been, on the whole, far from satisfactory to me in every respect, and I believe I can claim as good, if not better results than any one, especially in the work at the School for the Blind, as these little folks have been—at least some of them—under my care from one to three or four years.

From eight to nine months of each year, and since my first year, in order that I might not lose the benefit obtained, I gave all of them medicine to be used at home, which added to the general efficiency of the treatment; and yet, notwithstanding our efforts, many of the cases apparently would do well for a while, only to relapse without any apparent cause. With my unsatisfactory experience in the treatment, under what I consider most favorable circumstances, I have been looking for something better, and, in fact, have been trying anything which came under my no-

tice that held out any possible hope. I have tried many things, only to abandon them; and not until late last summer, in glancing over a little pamphlet ("Therapeutic Notes") sent out by Parke, Davis & Co., with which doubtless many of you are familiar, I noticed a short extract from a paper published by Dr. C. R. Hudgel, of Boise, Idaho, in *Northwest Medicine*, 1914. He says: "A case of trachoma in the second stage came under my care. I remembered to have seen an extract reporting a case cured by a general practitioner with tablets of B. B. culture. I am unable to remember his name. However, I determined to try the tablets. I reduced the tablets to a fine powder, everted and scarified the lids, and dusted the powder on the lids night and morning. I also used 1 per cent solution atropine, one drop three times a day, also hot applications. The lachrymation, photophobia—in fact, all other symptoms—began to subside at once. The pannus disappeared, and in two weeks the patient was well, and, with proper correction of his vision, he read 15-20. In two other cases I had similar results."

The results here quoted did not impress me. In fact, with my experience in the treatment of trachoma under the most favorable circumstances, the results were more in accord with the general results gotten by the profession in this disease. I, therefore, doubted the doctor's diagnosis and could not believe he had to deal with cases of genuine trachoma. But the suggestion of the use of B. B. culture did appeal to me very strongly as being worthy of trial. I wrote Parke, Davis & Co., calling their attention to the doctor's article quoted by them, and asked them to send me any literature or further information they might have bearing upon the subject. In a few days I received two bottles of samples and the usual literature sent out by them extolling the drug's merit in other conditions, but nothing on the subject of trachoma. Naturally, their silence to a specific inquiry, coupled with the fact that there was nothing in the literature sent me, I must confess, gave me very little encouragement. The natural presumption was that if there was anything in the treatment, their biological workers would be quick to see the importance of such a remedy. Notwithstanding this conclusion, as stated before, the idea impressed me very forcibly for the following reasons:

First, having in mind the several claims as to

the etiology of trachoma, whether or not it were due to some form of spore-bearing organism, plasmodium, filterable virus, or, as is generally believed, from its infectious nature, to be due to some specific germ as yet not determined, and, on the other hand, knowing from what I had been able to gather that the bacillus bulgaricus was a lactic acid-forming germ and that they thrived best in an alkaline medium, I reasoned, whether right or wrong, that we might hope for one of two or three things—either a direct bacteriological action of the bacillus or a chemical or fermentative action by the production of lactic acid in their growth and multiplication.

I had in mind the possibility of the liberation of a free or nascent acid that might destroy the destructive process going on in trachoma. The more I thought over the matter, the more I became convinced that there was merit in the remedy. Although, as before stated, I had little to encourage my hopes except my own conception and conclusions, I felt sure, in the first place, that I would do no harm and lose little time in giving the culture a trial. While my reasons may not

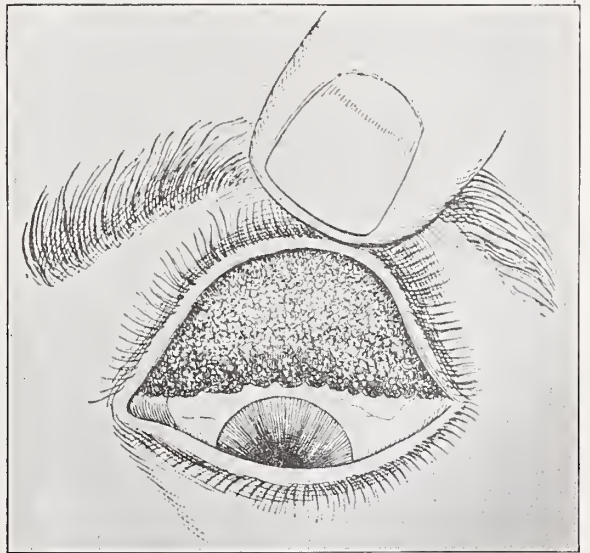


Figure 2. Follicular Trachoma (Johnson).

appeal to others or prove to be correct, I am frank to say that I never before used an untried remedy, especially on a disease that had puzzled the skill of the medical profession throughout the ages, with such confidence—more, probably, than I was warranted in feeling. The question of the mode of action and the cure will have to be worked out later by those who are more able

and with better facilities than I can command. I only throw out these few suggestions, with the hope that others may confirm or give a better solution than I here offer. However, the thing which most concerns us here is the treatment and

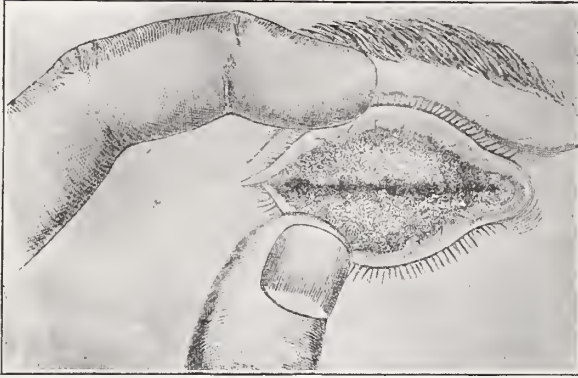


Figure 3. Everted Granular Lids.

the results, and not the etiology and mode of action of the bacilli.

A few weeks ago I presented to the Academy four of my cases, and, as I stated at the time, principally for three reasons: First, that the members of the Academy might have an opportunity to make their own diagnosis; and when I presented them later cured, as I fully expected to be able to do, no one could raise the question of a mistake in diagnosis. My second reason was to show what I attempted to explain—the marked improvement as clearly shown by the destruction of the granules indicated by the pocklike pits or marks left as shown beneath the conjunctiva, although this apparently was not noted by some even after I had called especial attention to the marks or pits. I then outlined the treatment and stated from the rapid improvement of the cases that I felt warranted in promising to show the cases cured by June 1, as June is the close of the school session, so far as the granules were concerned, but could not expect the cloudiness produced by the pannus to clear up so early. However, you will notice a marked improvement in this respect, too. I should state that through my efforts to clear up the cloudiness I am employing the usual remedies to keep up the inflammation of the eyes; otherwise the eyes would look much better. I am very fortunate, through the interest and kindness of Mr. Armstrong, the superintendent of the school, to not only be able to show you the four cases shown before, but

twelve of the fourteen cases under treatment. The two I am unable to show are both sick in bed. I further stated at the time that while I preferred to have had something more definite to offer in view of the almost certain value of the treatment, I did not feel that I had the right to withhold the knowledge from the profession in the interest of humanity.

Classification.—Ten of the fourteen cases were in the second stage of the disease. Two of these cases entered the school after the Christmas holidays, and, therefore, have been under treatment only since about the first of January, 1916; while the other eight cases in this class have been under me on the old-line treatment from one to three years. All except one of the ten had pannus, which has disappeared, and only the cloudiness of cornea is left. The boy without pannus, with correction, has vision 15-15 in both eyes. In the other cases vision has improved very much; but as the cloudy cornea clears, the vision will improve. I feel sure that with proper treatment such will be the case, and I hope next fall to report on this feature of the cases. Four cases were in the third stage. As you will notice, there is more or less distortion of the lids, with lashes turning in toward the ball, producing trichiasis, or “wild hairs.” These cases also have been under the old-line treatment from three to five years. One of this class had had one eye enucleated before entering the school, and the other eye has a thick, fleshy pannus, termed “pannus crassus” or “carnosus.” She also has a very cloudy cornea, with thinning of the cornea over the papillary area, with an old incarcerated hernia of the iris, evidently due to perforation of the cornea from an old ulcer. This occurred before she entered the school. Under the old treatment I could not hold out any hope for her, and I may be oversanguine at this time; but as she still has light perception and the pannus is improving, we can hold out a reasonable hope that as the improvement progresses the cornea may clear enough in some spot to warrant an operation for an iridectomy, with the hope of giving her vision enough to at least permit her to see her way around, if no more. In the other three cases I have advised operation on lids for trichiasis, and hope to operate before the end of the session, if we can get permission from their parents in time. If we take each eye separately, we have before you twenty-seven cases.

In one case only one eye was treated with B. B. culture, as the other eye had been cured by the old treatment, and, with correction, has vision 15-15 in the good eye.

Treatment.—About October 20 I went out to the school and selected two of the worst cases to begin the treatment on. I had the nurse under my supervision reduce one of the tablets to a powder, evert the lids, and dust the conjunctiva well with the powder. Both of the boys complained of a little smarting and burning, and kept their eyes closed about three minutes. When their eyes felt more comfortable and they were enabled to open them, there was no marked redness of injection of the eyes. I then instructed the nurse to use a fresh tablet each time, for fear that the powder might become inert; to use the powder night and morning, and also to use 10 per cent solution of argyrol at noon. I had her report to me the condition after the use of the powder at the night application, and her report was favorable. No great amount of inflammation or injection followed the application of the powder. I saw the cases the next day and for several days, until I fully assured myself that I at least was doing no harm. The next week I saw them two or three times. In the meantime I had cautioned the nurse, in whom I have a great deal of confidence, to promptly report any unusual condition. In about ten days I noticed a marked improvement in both cases under treatment, and instructed the nurse to begin the treatment in the other cases. As the cases began to rapidly improve, as shown by the disappearance of the granules and improvement in all other symptoms, I then only used the powder at night or once a day. We then began the use of dionin grs. xii, to water one ounce, one drop to be instilled into the eyes every other day, with the idea of clearing up the cornea. I have found that dionin, if used in this way, will not establish a tolerance and can be used indefinitely with good results. Atropine solution and hot applications were used as the indication arose from time to time. This is an outline of the treatment followed by me, other than meeting indications as they came up.

Of course it is too early to say with any assurance that this is the proper line of treatment. This will have to be worked out by me or others working along the same line. I am inclined to believe that we may get quite as good results with

the B. B. culture used only once a day, and am not so sure that argyrol is not a hindrance in the beginning of the treatment rather than a benefit, as I understand that it requires about twenty-four hours for the bacilli to develop and form a new growth to which they owe their efficiency. However, I am not inclined to believe that the argyrol interfered to any great extent, judging by the rapid improvement in these cases.

I had four cases develop iritis; but I am not able to say whether or not there is any greater tendency to iritis with this treatment—that is to say, whether or not the bacilli have a tendency to produce iritis—though I am inclined to think not, as two or three of the cases have had previous attacks of iritis.

While this is a disease that comes in the field of the specialist, and, I doubt not, will be in the future as in the past gladly turned over to the oculist by the general practitioner, there are many unfortunates in the rural districts who are unable to consult an oculist; and I shall attempt to outline a course of treatment to be followed by the family physician in such cases. I am convinced that he will do more good than harm, and, therefore, would advise the following course until something more definite can be formulated:

The first thing to remember is that this is an infectious disease. The patients should have

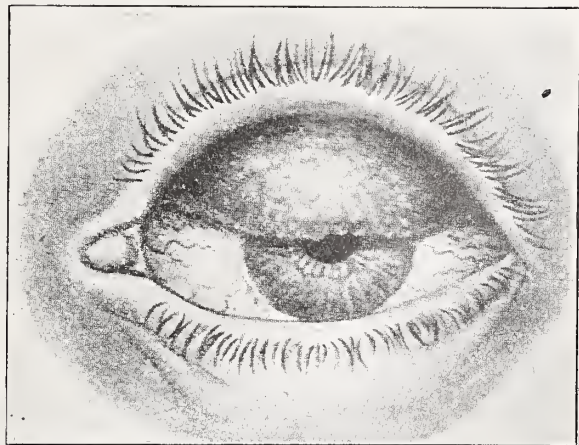


Figure 4. Vernal Conjunctivitis, or Spring Catarrh.

their own articles of the toilet—such as wash basin, towels, etc.; and, if possible, they should sleep by themselves. The doctor or attendants should be careful to wash their hands after handling the cases to avoid infection. To turn the lids, the lashes should be grasped by the fin-

gers of the left hand, the patient instructed to look down, and, with match or toothpick placed over the lid at the upper border of the tarsal cartilage, the lid turned over the match, and the powder well dusted once or twice a day on the everted lids. Use hot applications several times a day. In children up to ten or twelve years of age I would advise a solution of atropine, grains ii, to ounce of water, one drop three times a day. In all other cases up to the age of presbyopia—that is, up to forty-five—the atropine should be grains iv to the ounce. After this age the atropine should only be used as indicated by increased lachrymation photophobia and increased redness

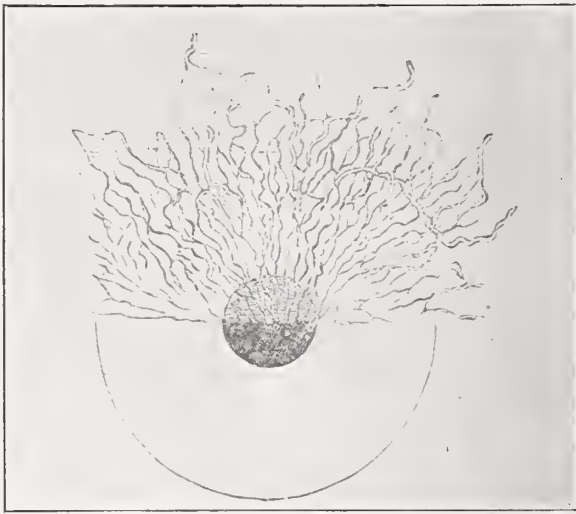


Figure 6. Pannus Affecting Upper Half of Cornea.

of the eye, indicating iritis. Keep in mind the danger of producing glaucoma in the old cases, as indicated by increased tension or hardening of the eyeball. As all symptoms improve and the granules begin to disappear, use the powder once a day; continue hot-water applications, argyrol solution, or any of the silver salts. As improvement is noted where you have a cloudy cornea, use dionin, yellow oxide mercury, grains i to the dram; place a small quantity of salve on the inner surface of the lid at night, and gently massage the closed lids. In no case should the eyes be kept bandaged, and the patients should be encouraged to get out in the fresh air as much as possible as soon as the eyes will tolerate the light; but avoid too much sunlight.

The advantages of the new over the old treatment are as follows:

NEW.

The length of time of treatment is from three to six months—maybe shorter.

Simplicity of treatment and little discomfort.

The prospects are for permanent cure in a few months.

The B. B. culture has the advantage of being able to reach every nook and corner of the diseased area; and there is, therefore, less likelihood of a recurrence.

The idea is to avoid operation when possible, and should get less scar tissue, as we do not have to cut or lacerate the mucous membrane.

The treatment promises more, and, to say the least, is humane.

OLD.

From one year to a lifetime.

Treatment complicated. Remedy often as bad as disease.

Cure uncertain and time indefinite.

Inability to reach all the granules with the drugs used or by any operation, and more liable to relapse.

In operation we not only have scar tissue from the disease, which is unavoidable, but we add to the scar tissue in any operation where we are forced to lacerate the conjunctiva.

The treatment is so painful as to at times approach the border line of the barbarous.

The question may properly be asked, 'with such a disease to deal with: "What assurance have you that the treatment will effect a permanent cure?"' I answer that time alone can settle that question. At the same time, if we concede that the pits or marks pointed out in my preliminary report, and which can be seen in some of the cases shown here to-night, also the typical scar formation, are characteristic sequellæ of trachoma and plain to be seen in all but two of the cases shown, then to all appearances the glandular tissue has been destroyed by the treatment and the cases are cured.

Again, the amount of cicatricial tissue, to those of us who are accustomed to deal with this class of troubles, should warrant us in feeling that there is little glandular tissue left to make us very apprehensive of a return. Another reason: Taking each eye separately, we have twenty-seven eyes. The trachoma granules, as stated before, have disappeared, except in two of the cases; and they are markedly improved, and in a few weeks should present the same appearance as the other cases. This being the case, we should hardly expect the improvement in the whole num-

ber to be a coincidence; so we must at least grant that there is merit in the remedy.

I have had no experience as yet in the treatment of acute cases; but I think we should expect equally as good, if not better, results in the acute cases. It will be of interest to note in the acute cases whether or not there will be left any scar tissue, and we ought to be able to settle a long-disputed question. It is too early yet to venture a definite opinion, but from my limited observation I am firmly convinced that the B. B. culture offers far greater hope in this dread disease than anything up to this time; and those of us who have had this condition to deal with are able fully to appreciate the load, in the event that it proves true, which it will forever lift from our shoulders. Speaking for myself, no disease with which we have to deal gives me a greater sense of responsibility and worry, especially the cases in the school. They have to submit to treatment, whether they want to or not; but not so with private patients—they are at liberty to leave me at any time, and, I confess, heretofore, with not a great deal of chagrin on my part. And should the results prove true, I shall rejoice with untold millions of suffering humanity that the day is close at hand when the suffering, the dread, and the fear of this scourge to mankind will have in some measure lost its terrors, and we, as physicians, may confidently respond to the Macedonian cry of our fellow-men with a new hope and message of good cheer.

A PLEA FOR BETTER PROPHYLACTIC MEASURES FOR THE PREVENTION OF SPECIFIC INFECTIOUS DISEASES OF CHILDHOOD.*

By J. T. MOORE, M.D.,
Algood, Tenn.

Every general practitioner must realize the serious effects of our epidemics of specific infectious diseases of childhood. Every woman who has a child born in Tennessee also realizes that, sooner or later, her offspring will most surely undergo the effects, pain, and suffering of a number of contagious diseases which are necessarily almost unavoidable under our present management.

I have been forcibly impressed that such a condition should not exist in our state. For this reason I thought it worth while to bring this subject before this society, hoping that by giving some attention and discussion to it we could by concerted action do a great deal of good toward preventing the thousands of cases of measles, whooping cough, chickenpox, mumps, et cetera, every year.

Is it right? Is it necessary that our children are so subjected to these diseases? You often hear the mother, with a gasp and sigh, accompanied by fear, say: "O, well! My neighbors' children have measles; mine must have it some time; so I guess they just as well have it now as any time." What can be done to prevent this state of affairs? Are these diseases so insignificant that we need not make an effort, or from our present knowledge have we not the means to prevent?

We cannot admit that the common diseases of children are of small consequence; nor can we who know the conditions in Tennessee admit that our efforts toward stamping out these diseases are what they should be. Then, it seems to me, here is a field of service for the general practitioner.

The surgeon claims, and justly so, that by the use of his scalpel he saves his patient from deformities and malformations, and in many cases from certain death. The general-practice man can never know, except in a few isolated cases, whether he saves them or not.

Now if we could institute a movement by which a large part of cases of measles and whooping cough are prevented, could we not feel that our mission is more thoroughly fulfilled? If by so doing, would we prevent suffering? Certainly so. If by so doing, would we prevent death? Certainly so.

If a case of smallpox is discovered anywhere in Tennessee, what is done? Why, everything which has been exposed to it is immediately quarantined under the strong arm of the law, and every effort is made by the health authorities—county, city, and state—to prevent the spread of this disease. Smallpox is a preventable disease; every human being in the state of Tennessee could be made practically immune from it; yet we may have measles and whooping cough combined—two diseases for which there is no immunizing remedy; and, so far as I have been

*Read at the meeting of the Middle Tennessee Medical Association, Lewisburg, May, 1916.

able to learn, there is no great effort to isolate these diseases.

Is it worth while? Any practitioner who has seen epidemics of these two diseases (mentioned because they are the ones most radically neglected) and observed their grave complications, and one who has seen sleepless nights of mothers, the suffering and coughing of these little fellows, the occasional death from one or both diseases combined, the crippled lungs, and other complications, cannot but realize that they demand a serious effort on our part to prevent.

There is no more distressing condition than to see a small infant suffering from measles and whooping cough together, and the prognosis is always grave. The complications of these diseases are many—broncho- or lobar-pneumonia, membranous laryngitis, convulsions, ilio-colitis, nephritis, and many others. A large per cent of those who have a tendency to tuberculosis succumb to the disease following measles. Our reports of these diseases in hospitals for children give a large mortality from broncho-pneumonia. Our means of combating diphtheria are good. It is a disease which attacks only a small per cent of those exposed, and our almost perfect serum treatment renders it a disease not to be greatly feared. There is a greater effort on our part to quarantine and isolate scarlet fever, although in some localities it is handled in a very indifferent way. Chickenpox is a nasty, annoying disease, and makes a child sick for a few days. It should, therefore, demand our attention. Mumps is of sufficient consequence to be avoided.

We fall further short in the handling of measles and whooping cough in this state than the other childhood infections. Within the last few months Knoxville has suffered an epidemic of measles, and I will here quote a clipping from one of the daily papers a few weeks ago, as follows:

"Within a period of four days three small children of Mr. and Mrs. G. M. Hill, residents here, died of measles. The first child died while the other two were lingering under the care of a physician. No sooner had the first died than the younger two grew weaker, and both died within a few hours of each other. A double funeral was held when the two younger children were buried. The children were aged two, four, and six years."

During March the corpse of a small child was brought from Knoxville to Algood for burial.

The death certificate was labeled "Pneumonia." A funeral service was held in a church, quite a number of children being present. The day following the brother of the dead child, who was at the funeral, broke out with measles. From this exposure we had about a dozen children come down with the disease. With so many scattered cases, the result was, we have had an epidemic of measles so widespread that it would be impossible to estimate the number of cases developing from the one case. The last epidemic of measles in my town previous to this was in 1913. This started from a young man who contracted the disease in Nashville. They did not call a physician until late in the disease, and when several children had been exposed. This resulted in a wide epidemic in Putnam and Overton Counties. There were a number of deaths of both children and adults as a result. Whooping cough came in, and we had the two combined sweeping onward in their career, maiming and sometimes producing death, the populace submitting to it as an inevitable consequence. Could these widespread epidemics be prevented? We are bound to answer, "Yes."

These diseases of childhood should be rigidly quarantined. It would be far better for all infected and exposed cases to be isolated, and thereby suffer some inconvenience, than for them to go at liberty, exposing a whole neighborhood or county or state.

I have seen cases of whooping cough on trains, in churches, and other public places. I have seen mild cases of measles in the eruptive stage going at liberty, having no regard for the welfare of others. The same is true of chickenpox and mumps. There are occasionally children who escape some of these diseases, not because they have not been exposed, but because they seem to be presently immune, but who later on in life are infected. Now, especially in measles, this may be very serious. It may come on an individual struggling to overcome tuberculosis. I had a case of this kind in 1913, a man forty years of age I was treating for tuberculosis. He had gained twenty pounds, and was practically a well man, able to work for his family. He was the father of nine children. His children contracted measles and infected him. He never regained his strength. Measles gave new life to the great "white plague," and he succumbed in a few months. Now this is only a striking example of

many such cases. Can we give no protection to these weakly constituted and delicate individuals from such contagious diseases which further lower their vitality, making them a prey to tuberculosis? By curtailing the number of cases of measles and pertussis, it seems to me we would be making a step forward in the prevention of tuberculosis.

Then, again, what could be very much more dreaded than to see a pregnant woman contract measles? This we all come in contact with. This woman should have protection. I repeat, is it not worth while for us to give a little more attention to measles and whooping cough? For several years I have given this subject considerable thought, but little action, because the cases pile up on us in such numbers; and the people, believing it has to be, make no effort to avoid it—just throw up our hands and say: "Let it go." But we should come to the parting of the ways. We should make a better fight against these two diseases. We should have some concerted action by the medical profession, so that these epidemics may not be so widespread in Tennessee. They are diseases which are not readily transmitted except by the infected person. They are diseases which, after those infected recover, the infection does not exist very long. For this reason the length of time in which isolation is required would be of short duration, and a mode of stamping out the disease certainly is obtainable. Would it not be best to isolate absolutely so far as possible all infected and exposed subjects in the very first cases that come under our care, and so at least confine these diseases to the grand division of our state in which they originate?

If every health officer and every other physician in Tennessee should make an effort along this line, we would get results. In the first place, we have to get the coöperation of the people, which can be done if they understand. In the second place, we need a sufficient number of health officers in every county in the state who should have strict supervision over all diseases, devoting their time and attention to better our sanitary conditions and receive just compensation for the same. What intelligent citizen of Tennessee would not rather pay a physician to prevent disease than to pay him to treat it?

Many a severe cold ends in tuberculosis.

REPORT OF TWO GUNSHOT CASES.*

BY W. F. CLARY, M.D.,

Memphis, Tenn.

During these times, when the whole world is engaging in the pleasant pastime of war, when the high explosives from 42 or 75-centimeter guns are doing so much damage, and when torpedoes from submarines or bombs from aëroplanes are astounding the world with their terrific destruction, I feel like offering an apology when I relate two cases which were caused by 38-caliber pistols.

Mr. G. L. T. on October 30, 1915, was brought to the Baptist Hospital in Memphis about six hours after engaging in a fight. Upon examination, he presented the appearance of a robust man, 230 pounds in weight, and forty years of age. His color was good; temperature, 99.8; pulse, 96; respiration, 28. He was suffering with intense pain in the bladder region. He was catheterized immediately. Twenty-six ounces of bloody urine was drawn. This demonstrated that the bladder was not perforated. Just below the angle of the left scapula there was a large, ugly powder-burnt wound. His assailant had shot him in a hand-to-hand encounter by reaching over his shoulder and placing the muzzle of the gun against his back while he was in a crouched position. The ball had lodged about one-third the way down the left thigh and a little internal to the femoral artery. An X-ray picture showed that a piece of bone had been broken off the under surface of the ramus of the pubis and had been carried along with the ball. From the wound of entrance and injury to the ramus of the pubis and the position of the ball, it was evident that the ball had also passed through the kidney, accounting for the blood in the bladder. The abdominal muscles were not rigid, and there was no evidence of free fluid in the abdomen. In view of his good physical condition and the extensive range the ball had taken, I decided to watch him and await developments. His pulse and temperature remained about normal until the fourth day, when his pulse went up to 100 and temperature to 102. He was suffering with pain about his stomach and a shortness of breath. A brisk purgative relieved these symptoms. His condition

*Read at the annual meeting of the Tennessee State Medical Association at Knoxville, April, 1916.

remained good, temperature and pulse about normal, until the tenth day. All this time, however, the urine continued to contain blood, and he was passing from thirty to forty ounces of urine per day. On the tenth day his urine was perfectly clear. That afternoon he had a slight rigor, temperature of 102, and pulse of 90. 'A purgative failed to relieve this; and on the following day he had a hard rigor, temperature of 106, pulse of 130, respiration of 38, and was delirious. He had never complained of any pain in the region of the kidney, and had no tenderness over this region. The kidney was protected by very heavy lumbar muscles and a great deal of fat; consequently it was impossible to tell much by palpation. I immediately drained the suspected kidney, and found that the ball had entered the upper pole and emerged at the lower pole of the kidney. The capsule was adherent at these two points, and the kidney was distended to about three times the normal size, and contained a large quantity of urine, clotted blood, and kidney debris. Free drainage and packing with gauze was instituted. His temperature and pulse were normal in twelve hours, and he was able to leave the hospital in one week from the operation. Ordinarily I think it the best plan after a severe injury to the kidney to make an exploratory incision immediately; but in this case, on account of the long course the ball had taken, I preferred the plan of "watchful waiting."

Another case of interest is that of H. M., age twenty-eight, shot in abdomen with 38-caliber pistol on December 10, 1915; arrived at hospital six hours after the injury. He was a fine physical specimen—athletic build; weight, about 165 pounds. His face was blanched; temperature, 99; pulse, 80. The ball had entered the abdomen just above the crest of left ilium. Abdominal muscles were boardlike, and evidences of free fluid in peritoneal cavity were marked. An immediate operation was performed—incision in median line. The abdomen contained a large quantity of blood and contents from the bowel. The ball had passed through the lower part of the descending colon and a number of loops of the small intestines. All together, we repaired sixteen perforations of the bowel and a number of mesenteric perforations. A cigarette drain was placed in the lower abdomen. The rest of the wound was closed with catgut and reinforced with silkworm-gut tension sutures. After a two

hours' session, he was returned to his room with a pulse of 90 and of good volume. For four days his temperature ranged from 99 to 101 and pulse from 70 to 90. On the fourth night paralytic ileus was marked, and traumatic peritonitis was evident. About 1:30 A.M. of the fourth night, during a violent spell of vomiting, he broke the catgut and two silkworm-gut stitches nearest the drain. This allowed a loop of gut to protrude from the wound. It was an unpleasant message at that time of the morning, but it did not take many minutes to have him in the operating room again. The loop of bowel was opened and gas and fecal matter allowed to escape. Then a large rubber drainage tube was put into this opening, just as a gall bladder is drained. I pulled another distended coil of intestine outside the wound, and opened this in the same manner. This flattened his abdomen, and I sewed up this opening and replaced the bowel. He was returned to his room with pulse of 120 and respiration 4 to the minute. This slow respiration continued for four hours, and never reached 16 for four days.

Fowler position and Murphy drip were used from the time of his first operation, and nothing was given by the stomach except water for eight days. His bowel drained through the tube for several days. When drainage around the tube appeared, the tube was removed, and fecal fistula remained. The intestinal secretions were very irritating to the skin. The surface of the lower abdomen was soon raw and bleeding. By the administration of Lederle's Bulgarian bacillus preparation, the condition of irritation was removed to a great extent and the intestinal tract prepared for future closure of the fistula.

On December 18 he was given a flatus enema, this being the first effort to get his bowels to move. This had the desired result. From this time on his bowels were moved once a day by an enema. After starving for a week, the patient began to have an appetite; but the fecal fistula in the small intestine drained continuously, and for several weeks it looked as if he would die of starvation, although he was eating enough for two or three men. I devised the plan of plugging the wound with a large piece of cotton and strapping the abdomen very tightly with adhesive plaster. This solved the problem of retaining his food long enough to get some absorption, and he began to build up. After two weeks of

this, I attempted twice to close the fistula under local anæsthetic, but failed in both instances. Then I had to go back to the plugging and strapping and feeding procedure until he was in a safe condition to take a general anæsthetic.

On February 12, 1916, he again took ether, and I successfully closed the fistula. Three weeks later he left the hospital, having recovered perfectly. I saw him in Memphis last week, and he was about the healthiest-looking man on the street.

There is one other point in the treatment of this case to which I wish to call your particular attention. This patient never had a single dose of purgative or laxative medicine during the entire time he was under my care, which all together was three months. It is my opinion that many deaths are due to the early use of purgatives in severe injuries and in acute inflammatory diseases of the abdomen. I mention purgatives only to give them the proper condemnation, but I realize that there are proper times for purgatives.

One thing more I am going to advocate and practice, and that is the use of a rubber drainage tube, placed into the gut through an original perforation, whenever much trauma has been done to the intestines by a bullet. I will use the tube, and prefer to deal later with a fecal fistula rather than subject my patient to the dangers of paralytic ileus due to traumatic peritonitis.

DISCUSSION ON THE PAPER OF DR. CLARY.

DR. WILLIAM BRITT BURNS, Memphis: I have nothing to add to the paper, except to wonder what produced the slow pulse after his second operation. The doctor did not say whether the slow respiration was produced from an overdose of morphine that the nurse might have given, or whether it was one of the by-products that is built up in the economy, the nitrites, or those combinations that act frequently like alkaloids. At any rate, that is an interesting question, and one I thought was worth mentioning.

DR. C. N. COWDEN, Nashville: There is one feature I would like to speak of in connection with this paper, and that is the nourishment of the patient. It becomes a serious problem sometimes if, in doing an enterostomy, you take hold of a loop of intestine that is high up. The secretions are very excoriating, causing redness and inflammation of the skin surfaces all around, and the patient takes nourishment with fear and trembling. It brings out from the wounded surface the secretion.

In a case we had not many months ago there was great difficulty in feeding. In fact, we failed to feed the patient in any way satisfactorily. The wound was much inflamed, the secretions were pouring out until the abdomen looked like a piece of raw beef, and one of the assistants at the hospital suggested the idea that possibly we might feed the patient through the fistula. Accordingly, we got a large-sized catheter, connected it up, and from that day the problem of feeding the patient was solved. I am sure if it had not been for that way of feeding the patient through the fistula, the patient would not have lived. The third day we began feeding in this manner, shortly after which the patient began to take on added strength. It is a simple thing, after getting the patient nourished, to close the fistulous tract.

DR. W. T. BLACK, Memphis: This case was certainly skillfully managed. The manner of withholding food for so long a time shows the proper management of the case all the way through. The idea of draining through the original wound in the intestinal tract seems to be a good plan, and the author's experience in treating fecal fistulas under local anæsthesia is to be commended. They look easy to close, but they will not stay healed usually unless all adhesions are liberated. Deep fecal fistulas are easier to heal. Where you have a superficial fecal fistula, even if you can get at it and close it up, it will not stay closed, as a rule.

DR. W. F. CLARY, Memphis (closing): The question Dr Burns brought up of slow respiration was one that bothered me considerably, and I do not know that I have ever become any wiser in regard to it. The patient did have a dose of morphine, one-quarter of a grain, and 1-100 of atropine just before the operation was done. However, before the first operation he had the same dose, which apparently had no effect upon the respiration or pulse. He suffered very little from either operation, and required very small quantities of morphine to relieve his pain. I personally stayed with him three hours after the operation on account of this type of respiration, watched it myself carefully, and saw that it did not vary. His pulse was of good volume, although a little fast; and I do not know whether it was the poison from the intestinal tract that caused the depression or whether it was from the morphine.

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THE SECRETARY

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Independent Life Bldg., Nashville, Tenn****AUGUST, 1916****EDITORIALS****SOME COMPARISONS.**

The state of Florida spends \$129,000 yearly for the promotion of public health; Tennessee spends approximately \$16,000. Florida's per capita expenditure is 15.21 cents; Tennessee's, seventy-three hundredths of 1 cent. Virginia's annual appropriation for public-health work is about \$45,000; Tennessee's is nearly two-thirds less. Virginia also provides \$45,000 annually for the maintenance of a state hospital for the treatment of tuberculosis; Tennessee has no such institution. Mississippi, in which state a state health service has only recently been established, appropriates about \$23,000 yearly for the use of the State Board of Health; Tennessee has about one-third less. And so it goes, with only one state of all the Southern states making less adequate provision than Tennessee for the most important matter of health conservation, and that state Arkansas.

In one county in Tennessee the County Court Clerk is said to receive from \$20,000 to \$25,000 in addition to the amount necessary to pay the expenses of conducting his office; this is from \$4,000 to \$9,000 more than the entire appropriation by the state for public-health work. In this same county a Register of Deeds is said to gather about \$15,000 into his pockets each year in addition to the two or three thousand that it takes to pay the two clerks who do what little work there is to be done; Tennessee's public-health appropriation would just about pay the fees that this one county register takes in "clear" every year.

Tennessee has an "ouster" law that is "right up to the minute," and which seems to be easily enforceable, if we are allowed to form conclusions from the numbers of hitherto powerful men who have been ousted; Tennessee also has health laws that are so antiquated, with one or two excep-

tions, that they are almost laughable to contemplate; and who is to enforce them, and how?

A number of progressive states, with adequately supported public-health organizations, have materially reduced their death rates from tuberculosis, typhoid fever, infantile diarrhœas, and other preventable diseases; Tennessee continues to rock along with her long-established yearly output of 4,500 dead from tuberculosis, 1,000 dead from typhoid, 1,200 babies dead from infantile diarrhœa, and otherwise fully maintains her position at the top of the list as a furnisher of human victims for life-taking maladies.

The dollars-and-cents loss to Tennessee from the evil effects of preventable disease annually amounts to a stupendous sum. No other influence costs the state as much, unless it be Tennessee politics—one of the reasons for the continuance of our disgraceful record of death and disability from disease.

What is to be done about it? What are you going to do about it?

STATE BOARD OF MEDICAL EXAMINERS.

A letter to the JOURNAL from Dr. S. W. Woodyard, a member of the State Board of Medical Examiners, contains the information that 149 applicants appeared before the board for examination in 1916, and that 18 of these failed to secure license because of failure to pass satisfactorily the examination. Dr. Woodyard states that the class of applicants was far superior to former classes, generally speaking, and that the Board of Examiners was greatly pleased with this evidence of the improvement in the type of men who desire to enter the medical profession.

Tennessee now enjoys reciprocal relations with twenty-five states—Arkansas, Colorado, District of Columbia, Georgia, Indiana, Kansas, Maine, Michigan, Mississippi, Minnesota, Maryland, Missouri, North Carolina, New Hampshire, New Jersey, New Mexico, Nebraska, Oklahoma, Pennsylvania, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming. In New Jersey, New Hampshire, and the District of Columbia there are certain restrictions which do not exist with reference to reciprocity in other states.

Dr. Ambrose McCoy, of Jackson, was reelected

as President and Dr. A. B. DeLoach as Secretary of the Board of Medical Examiners.

The JOURNAL is very grateful to Dr. Woodyard, who has served so well as a member from East Tennessee, for the information concerning the work of the Board of Examiners.

TENNESSEE PHYSICIANS WITH STATE TROOPS.

The health of Tennessee state troops is being safeguarded through the efforts of a corps of splendid physicians, among whom are surgeons, internists, and men who have made a special study of sanitation and preventive medicine. Some of these gentlemen have made no small sacrifice of personal interests to give their services to the soldiers who are ready to meet whatever comes in upholding the proud military record of the old "Volunteer State." The medical profession of Tennessee is proud of its representatives in the soldier forces of the state, and the JOURNAL is glad to record their names on this page. According to the information we have been able to secure, the names and rank of the medical officers now at Camp Rye are as follows: Major J. H. McCall, Major J. R. Nankivill, Major J. M. Troutt, Captain R. H. Newman, Captain Larkin Smith, Major R. B. Dunnivant, Captain J. L. Morgan, Captain P. A. Perkins, Lieutenant M. D. Hartman, Lieutenant W. J. Hillas, Lieutenant W. L. Williamson, Lieutenant J. D. Capps, Lieutenant L. D. Hill, Jr., Lieutenant Jesse Hill, Lieutenant Olin W. Rogers, Lieutenant A. S. Dabney, Lieutenant W. B. Ward, and Lieutenant K. C. Copenhaver.

INFANTILE PARALYSIS IN TENNESSEE.

There is, perhaps, no disease in which an early diagnosis is more important, and at the same time more difficult, than acute poliomyelitis. Tennessee physicians should exercise extreme care to avoid the possibility of a case of infantile paralysis "getting by" undiagnosed and unguarded.

Infantile paralysis has been present in several counties in Tennessee for more than a year; and while the disease has become epidemic in only one community, the danger of a death-dealing outbreak is very real as long as sporadic

cases continue to appear. There have been several deaths within the last few weeks.

Poliomyelitis may occur at all ages, although children between the ages of one and five are far more often attacked than persons of any other age period. The disease is transmitted from secretions from the nose and mouth and the intestinal discharges, and the infection is thought to be transmitted through the mouth, tonsils, and nasal mucous membranes. In no other disease, perhaps, is the carrier a more important factor in spreading infection.

It is very important to remember that abortive cases of poliomyelitis are very common whenever the disease is present to any considerable extent. These may present no very pronounced symptoms beyond irritability, muscular tenderness, and spinal pain; and even these symptoms may be transient. From the standpoint of prophylaxis, the abortive cases are of very great importance. In this type paralysis of one or more groups of muscles may develop, only to disappear within a few hours. Spinal punctures and examinations of the cerebrospinal fluid will greatly facilitate diagnosis.

In severer cases paralysis may occur as early as the first day, and escape detection for some time unless the physician is watchful and observant. In nearly all cases of the cerebral group, paralysis develops before the sixth day.

Symptoms are usually manifest in the infected nonimmune person in from five to ten days after exposure. The usual period of incubation is said to be seven days. Isolation should be maintained for a period of eight or nine weeks.

Every case of poliomyelitis should be isolated—i-s-o-l-a-t-e-d—in a room screened and free from carpets and curtains and stuff and with plenty of fresh air admitted. If possible, every case should go to a hospital.

Every case should be reported *immediately*.

Every doctor in Tennessee should at once turn to his best possible source of information and prepare himself for the diagnosis, treatment, and prevention of acute poliomyelitis.

DISGRACING A NOBLE PROFESSION.

It seems that there can always be found men who class themselves as members of the medical profession willing to do almost anything for a consideration. It matters not to them what the

result of their action will be as it affects the general welfare and the honor of the profession of which they claim to be a part. With them the dollar is the thing, and for the dollar their services may be had. Many of them are ignorant far below the general average, it's true; but they are smart enough to demand a price and to give the service, whatever it may be, that is demanded of them for a price. There are others who are intelligent with the most intelligent, but whose eagerness for pecuniary gain leads them into the same reprehensible practices as those of which the ignorant are guilty. The first class are, as a rule, not members of their local and state medical organizations; the latter are much more often found enrolled as members. Some of both kinds were hired by the plaintiffs in the recently tried suit against the Journal of the A. M. A.

DR. J. H. LACKEY.

Dr. J. H. Lackey died at his home in West Nashville on July 26, 1916. The cause of death is said to have been angina pectoris.

Dr. Lackey was for many years a practicing physician in Kentucky, having removed to Nashville about three years ago in order that he might be with his children, who had made their homes in this city. Because of his many years of membership in the Kentucky State Medical Association and because of the ties which held him to the profession of his native state, he continued his affiliation with that organization. Since taking up his residence and the practice of medicine in Nashville, Dr. Lackey had made many friends, who were attracted to him by his courteous bearing, his unfailing good humor, his straightforward manliness, and his unostentatious, but very genuine, goodness.

With the passing of Dr. J. H. Lackey, one more of the old order of doctors who believed in honesty for honesty's sake and who upheld the highest ideals of medicine, for medicine's sake has fallen from the ranks.

WHAT WE CALL "GOOD SENSE."

The following letter to the Memphis Commercial-Appeal contains just such common-sense information as should be given to the people of

Tennessee. Vaccination against typhoid is good, but the removal of the cause is better.

SANITATION ONLY SAFEGUARD.

To the Commercial-Appeal:

Typhoid can only be eaten or drunk.

If we sterilize our food and then only touch it with clean hands, we cannot take typhoid fever. This is why the disease is rare in infancy. There should be no confusion as to the source of typhoid fever.

All infectious diseases have waves of increasing or diminishing intensity. At the present time conditions seem to prevail which favor the spread of typhoid fever and infantile paralysis. So long, however, as we derive our produce and other food from sources where all the laws of health are disregarded, we will have an excessive typhoid rate.

So long as people calling themselves "civilized" insist upon poisoning each other with their excreta, no substantial improvement may be looked for. The typhoid rate for the United States, as a whole, is now 20 per 100,000. In some Southern cities it is 50; in certain rural districts it is over 60, according to Freeman, epidemiologist of the Public Health Service.

Taking at random a few European cities in 1910, we find: Stockholm, 1.8; Christiania, 1.6; Munich, 1.4; Frankfurt, 0.9; Paris, 5.6; Brussels, 16; St. Petersburg, 33.7. The average for European cities was 6.5; for Germany, 2.3.

The rate in the Memphis district, which is rather below that for the South as a whole, is 20 times the normal for Germany—in normal times, not in epidemic years.

This situation cannot be improved unless we begin a system of rural sanitation. There must be full-time, specially trained health officers, with a budget generous enough to start something. At the present time the local health officer in counties and small communities is nothing more than a figurehead. The man in authority appoints his family physician local health officer, for which he receives a small retainer fee. He vaccinates school children (usually unskillfully), signs official documents, and publishes a few bulletins.

These are expected to scare away typhoid fever, malaria, and tuberculosis. He also placards houses for reported infectious diseases.

There is entirely too much money spent upon county pesthouses. If people refuse to be vaccinated, by all means let them have smallpox. For this disease there is no other remedy. Isolation is usually done too late. Transporting a case of virulent infection for long distances is not good practice. Disinfection where the source is unknown is like scaring away blue devils with unearthly noises. The money wasted in this way would do much constructive work.

Human excreta is the source of typhoid fever. The etiology of typhoid fever can be summed up in three words—"flies," "fingers," and "filth."

WILLIAM KRAUSS.

A flyless town has few funerals.

TENNESSEE DOCTORS FOR AND AGAINST CARDUI.

The JOURNAL has secured from the American Medical Association the names of Tennessee doctors who testified for Wine of Cardui and those who testified for the A. M. A. in the recent suit at Chicago. Here they are:

TENNESSEE PHYSICIANS WHO TESTIFIED FAVORABLY TO WINE OF CARDUI.

Ault, Dr. W. H., Litton, Tenn.
 Ausbrook, Dr. M. T., Smartt, Tenn.
 Brown, Dr. W. C., R. D. Henderson, Tenn.
 Cartwright, Dr. J. N., Whitwell, Tenn.
 Davis, Dr. T. H., 10 miles south of Cleveland, in Bradley County.
 Friddell, Dr. L. L., Birchwood, Tenn.
 Gates, Dr. B. F., R. D. Cleveland, Tenn.
 Goodner, Dr. J. G., Big Spring, Tenn.
 Green, Dr. W. T., Dayton, Rhea County, Tenn.
 Hyde, Dr. I. N., 625½ Church Street, Nashville, Tenn.
 Lane, Dr. C. M., R. 3, Greenback, Tenn.
 Lockert, Dr. W. S., Lockertsville, Tenn.
 Loring, Dr. B. F., Union City, Tenn.
 Marsh, Dr. Newton B., Henderson, Tenn.
 McDonald, Dr. W. C., Soddy, Tenn.
 McMillan, Dr. Tom, Alexandria, Tenn.
 Massey, Dr. Z. D., Sevierville, Tenn.
 Ramsey, Dr. G. A., Cleveland, Tenn.
 Roberts, Dr. A. W., R. D. 2, Sevierville, Tenn.
 Singleton, Dr. J. D., Maryville, Tenn.
 Swan, Dr. E. A., Old Fort, Tenn.
 McKenzie, Dr. W. U., Center Point, Tenn.

TENNESSEE PHYSICIANS WHO TESTIFIED FOR THE AMERICAN MEDICAL ASSOCIATION.

Foster, Dr. J. I., Huntsville, Tenn.
 Haggard, Dr. W. D., Nashville, Tenn.
 Keeton, Dr. W. B., Scott's Hill, Tenn.
 Reisman, Dr. Edward E., Chattanooga, Tenn.
 Roberts, Dr. G. M., Chattanooga, Tenn.

Only one of those who testified for Wine of Cardui is a member of the Tennessee State Medical Association; all of those who testified for the A. M. A., and who thus threw their weight into the scale against patent medicines and their pernicious influences, are members of the association. Without further comment, we invite our readers' attention to the two lists of names as they appear above upon information from the American Medical Association.

NOTES AND COMMENTS

There are now more than 1,550 of the best doctors in Tennessee enrolled as members of the Tennessee State Medical Association. Let's make it 2,000!

Drs. A. S. Dabney and W. B. Ward, Nashville, and Dr. L. D. Hill, Jr., Knoxville, have received commissions as medical officers with the Tennessee state troops.

Dr. L. E. Ragsdale has resigned the superintendency of the East Tennessee Hospital for the Insane, and Dr. E. W. Mitchell, Crossville, has been elected to succeed him.

Sir Victor Horsley, the noted British brain surgeon, died in Mesopotamia on July 16 while on duty with the troops of his country, his death having been due to heat stroke.

Several of the counties in which doctors are not so numerous have done far better than some of the larger counties. Two or three of these counties have nearly every eligible man enrolled.

Dr. and Mrs. Douglas Hayes announce the marriage of their daughter, Miss Dorothy Augusta, to Mr. Frank Clark Scofield, Lieutenant, Coast Artillery, U. S. A., on the 22d of July, 1917, Tracy City, Tenn.

Shelby County needs one more man to make it 200. Davidson has an even 140—considerably less than she should have. Knox has reached new figures, with 115 names enrolled. Hamilton is behind, having only 97 members.

Dr. R. H. Perry, formerly of Russellville, Ky., having completed a service of three years in New York hospitals, has located in Nashville for practice in diseases of children. Dr. Perry has taken offices in the Jackson Building.

Poliomyelitis is one of those sneaking diseases which slips up on the doctor, hiding its identity until there has been plenty of time for its spread from the original case. The disease is present in several counties in Tennessee. Watch for it.

Better wages make better health.
 Better health makes better citizens.
 Better citizens make a better nation.

Dr. John M. Lee, Nashville, after more than two years' hospital work in New York, has entered upon a six months' service in the wards of the children's hospital connected with Harvard University. Dr. Lee will return to Nashville next winter.

Major Huntington, M. C., U. S. A., who has been Senior Medical Officer at Camp Rye, has been detailed to duty at Plattsburg, N. Y. Major Huntington made many friends while in Nashville. He delivered a most interesting address to the Nashville Academy of Medicine on July 11.

Sullivan-Carter-Johnson makes a fine showing with 54 names on the roll. Dyer is well up in the list, with 37. Giles has 28 members. Henderson keeps up to her usual fine record, with 27. Gibson's membership is 28, but should be larger. Lauderdale has come to the front this year, with 26, which number exactly equals the enrollment of Lincoln. Maury has done exceptionally well, with 35.

The Battle Creek Sanitarium will celebrate its fiftieth anniversary on October 3, 4, and 5. This great sanitarium occupies a most unique place among the institutions of America. In the fifty years of its existence it has contributed nearly a million and a half of dollars for the care of the indigent sick. The program for the celebration includes a big outdoor spectacle, a street pageant with historical floats, a race-betterment exhibit, conferences on child labor, eugenics, tuberculosis, a "Health Chautauqua," with numerous prominent speakers, receptions, and a huge banquet. All physicians are invited to attend the celebration.

READ BULLETIN NO. 8.

Our readers will find Bulletin No. 8 on advertising page No. 19 in this JOURNAL. It gives some good reasons why advertisers should patronize us, and some equally good reasons why we should buy from our own advertisers. The JOURNAL is proud of the class of advertising matter that is carried, and considers every word of it dependable. There are some new ads. in this number, and we want *you* to look them over, along with all the old ones.

SOCIETY PROCEEDINGS

BEDFORD COUNTY.

The Bedford County Medical Society met in regular session on July 20, 1916, and was called to order by the President, Dr. S. S. Moody, with the following members present: Drs. Thompson, Dyer, Coble, Conditt, Ray, G. W. Moody, Avery, Patton, and Reagor.

The minutes of the previous meeting were read and approved.

A communication was received and read from the Coffee County Medical Society, asking that a joint meeting of the Bedford, Coffee, and Franklin County Medical Societies be arranged for some time in August or September. This invitation was unanimously accepted, and the Secretary was directed to notify the Coffee County Medical Society that we were quite ready to meet with them, and to request that a time and place for meeting be named by them.

Dr. G. W. Moody presented a paper entitled "Improper Feeding in Early Childhood, and Its Sequellæ." The discussion was very spirited and interesting. Drs. Conditt, Coble, and Ray reported interesting cases.

Adjournment was taken until the next regular time for meeting.

F. B. REAGOR,

Secretary.

BRADLEY COUNTY.

The Bradley County Medical Society was organized in April with nine members, and since that time two additional names have been enrolled. Meetings were held in May and June but the July meeting had to be missed because of inclement weather. A most interesting program has been arranged for each monthly meeting until the end of the year, a number of prominent physicians from other counties having been secured for addresses at the various monthly meetings. In addition to the scientific programs, the society has arranged a series of popular meetings, at which the public will have opportunity to hear subjects of important interest discussed. This is a fine move for this new society to make and it is to be hoped that their effort to give helpful protective information to the general public will be appreciated and taken full advantage of by the people of Bradley County.

Dr. J. L. McKenzie is President; Dr. J. L. McClary, Vice President; and Dr. Dabney Minor, Secretary, of the Bradley County Society; and, in addition to these officers, Drs. T. E. P. Chambers, E. A. Quinn, J. L. Shugart, R. L. Taylor, C. T. Speck, J. F. Gilbert, and S. B. North are enrolled as members. The JOURNAL extends congratulations upon the splendid start this new society has made, and hopes to see its list of members extended to include every reputable physician in the good county of Bradley.

SULLIVAN-CARTER-JOHNSON COUNTY MEDICAL SOCIETY.

The dividing line between Tennessee and North Carolina crosses the top of Roane Mountain, towering 6,300 feet; and quite near by is Mount Mitchell, the highest mountain east of the Rockies. This entire region along the lower slopes has an elevation of 3,000 feet above the sea. Nowhere can a more delightful climate be found nor a more ideal location for a summer resort, as the hundreds who go to Roane Mountain each year will bear witness. The trip through the Doe River Gorge en route to Roane Mountain is particularly delightful at this season. The rugged, awe-inspiring scenery, which is unexcelled in grandeur and which never fails to fill the traveler with wonder and appreciation of its beauty, greets the eye on every side.

On Wednesday, July 6, 1916, Dr. S. B. Wood was the hospitable host of the Sullivan-Carter-Johnson County Medical Society at Roane Mountain, and what proved to be one of the most pleasant meetings in the history of the society was held. Upon their arrival, the visitors were directed to Roane Mountain Inn, of which Dr. Wood is the genial proprietor, and were seated in the parlor of the inn, where the program arranged for the meeting was carried out. Dr. C. J. Broyles, Johnson City, read a highly interesting and instructive paper on "Deflections of the Nasal Septum, and Their Correction," which was given very earnest attention and received enthusiastic discussion.

After the business of the society was dispatched, the guests were invited into the dining room of the inn, where an elegant luncheon, deliciously prepared and most attractively served in six courses, was partaken of. The table decorations carried out the popular "preparedness"

idea. Small canvas tents were spread to mark each plate, and miniature cannon held the place cards and served as favors, while the flag of the nation waved in majesty in most unique arrangement.

Dr. Wood was voted an ideal host, and it was with reluctance that his visitors said good-by to return to their respective homes.

G. E. CAMPBELL.

NOTE.—The Sullivan-Carter-Johnson County Medical Society has grown to be one of the largest in the State Association, now numbering 54 members.—Ed.

OBION COUNTY.

The Obion County Medical Society had a good meeting on July 11 in Union City. As this is the third well-attended meeting our society has had of late, we begin to feel like telling about it. At this last meeting ten fairly respectable doctors took part in a very interesting discussion of "Typhoid Fever," on which subject Dr. J. B. Adkerson furnished us a paper. The discussion was led by our venerable and distinguished Dr. Pierce.

Our society is working hard to be worth while.

J. D. CARLETON,

Secretary.

NOTE.—If the Obion County Medical Society, which should be one of our best, will "work hard," it will be "worth while" all right. It can't help it.—Ed.

JEFFERSON COUNTY.

The Jefferson County Medical Society met in regular monthly session at Jefferson City on June 13, 1916, the meeting being called to order by President Taylor. The discussion of "Rheumatism," which was continued from the previous meeting, was carried on by Drs. Duke and Lequire, and the discussion was closed by Dr. Roberts.

Dr. Lequire read a paper on "Influenza," which was discussed by Drs. King, Roberts, Duke, Walker, and Tittsworth, and the discussion was closed by the essayist. A paper on "Hysteria" was read by Dr. Kinder and discussed by Drs. King and Walker. This subject will be further considered at the next meeting.

An Obituary Committee, consisting of the

President and Drs. Lequire and King, was chosen by the society, and all physicians of Jefferson City were appointed to serve as members of the Reception Committee for the meeting of the East Tennessee Medical Association in October.

Dr. Roberts was requested to secure the paper prepared by Dr. Tadlock on "Constipation" in order that it might be filed with the important papers of the society.

Subjects for next meeting: "Diagnosis of Pregnancy," Dr. Tarr; "Pathologic Pregnancy," Dr. ———; "Toxæmia of Pregnancy," Dr. Dukes.

Adjournment was taken until the time of the next regular meeting, to be held at Dandridge on July 4, 1916.

B. M. TITTSWORTH,
Secretary.

RUTHERFORD COUNTY.

The July meeting of the Rutherford County Medical Society, so we note from the card sent out by the Secretary urging members to attend the August meeting, was more largely attended than any meeting held by the society for a number of years. At the August meeting a general discussion was had on "Fevers Common to Our Section."

The Rutherford County Society now has 24 members enrolled. Dr. J. A. Scott is President and Dr. E. H. Jones is Secretary.

A cold bath every morning is the best complexion remedy.

A low infant mortality rate indicates high community intelligence.

Neglected adenoids and defective teeth in childhood menace adult health.

Clean water, clean food, clean houses make clean, healthy American citizens.

The registration of sickness is even more important than the registration of deaths.

The state of California has reduced its typhoid death rate 70 per cent in the past ten years.

GIVE THE BABY A CHANCE.

Bad air, bad milk, overcrowding, poverty, dirt, ignorance, heat—these combine in summer to kill the city baby. It seems as though the brunt of the cities' sanitary sins were focused on the baby. The baby didn't ask to come, to live in a hot, dark, air-tight tenement, to be fed on dirty, half-spoiled milk, to be pestered with flies and mosquitoes. He is not responsible for any of these conditions, and it is his right that he have fresh air, clean surroundings, and decent food. The United States Public Health Service issues free of charge to all applicants a bulletin on "The Summer Care of Infants." It should be in the hands of every mother.

BOOK REVIEWS

VENESECTION. By Walton Forest Dutton, M.D., Philadelphia. F. A. Davis Company, Philadelphia, 1916. Cloth, \$2.50 net.

This is a most interesting little book from the pen of one who believes in venesection because he knows from his own experience that venesection, properly practiced, is an agent of great therapeutic value. It is remarkable, indeed, that scientific venesection has fallen so largely into disuse, especially in the face of its wonderful success as a life-saving measure in the hands of a comparative few who resort to it as a routine measure in numerous grave conditions, many times with most wonderful success. Not intended as a treatise on disease, this book is a most intelligent presentation of facts establishing the value of blood-letting and giving indications and contraindications in the various conditions in which venesection is applicable.

PRACTICAL MASSAGE AND CORRECTIVE EXERCISES. By Hartvig Nissen, for twenty-four years Lecturer and Instructor of Massage and Swedish Gymnastics at Harvard University Summer School, etc., etc. F. A. Davis Company, Philadelphia, 1916.

This is an enlarged and revised edition of Nissen's book, and is a very thorough work on a subject of far greater importance than the average man attaches to it. The author is inclined to make somewhat greater claims than are altogether justifiable for the value of massage in some instances, but his book is perhaps worth while for a discriminating reader.

PRACTICAL MEDICINE SERIES. Vol. III., 1916; Eye, Ear, Nose, and Throat. Wood, Andrews, Shambaugh, Yearbook Publishers, Chicago. Cloth, \$1.50, \$10 a year.

This is the usual splendid review of the literature of the year on the especial branch of medicine and surgery to which this volume of the Practical Medicine Series is devoted.

THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, under Direction of the Trustees

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J. F. GALLAGHER, M. D., Associate Editor

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NUMBER 5

ROUTINE IN EYE WORK.*

By G. C. SAVAGE M.D.,
Nashville, Tenn.

The title of my address presupposes preparedness for practice. The past, in many instances, would not justify this presumption, for it has been notorious that "the six-weeks' postgraduate course" has plunged many a man into eye work without proper preparation. As out of the old-time medical course of two years, which never did fit one for the practice of medicine and surgery, there occasionally grew giants—such as Flint, Gross, and others—so out of a course in ophthalmology all too short there have sprung some men of might in our specialty. The real preparation of these men began after their short courses of study, under teachers, had ended, and was carried on by dint of personal effort in private study and meditation, long continued.

"The heights by these men reached and kept
Were not attained by sudden flight;
But they, while many comrades slept,
Were toiling upward in the night."

Times are changing, and the near future will reveal a more perfect preparation on plans more practical. Rules for governing the future teaching of ophthalmology are now being formulated by committees from the American Ophthalmological Society, the Section of Ophthalmology of the American Medical Association, and the Academy of Ophthalmology and Oto-Laryngology. The joint report of these committees, doubtless, will demand that only graduates in medicine shall be permitted to enter a specific and pro-

longed course in ophthalmology, in a medical institution authorized by law to confer degrees, and that only such a degree will entitle an applicant to the privilege of an examination by a properly constituted, lawful national board of examiners, whose certificate would give him the legal right to practice in any state of our Union.

We who are already in the practice need not be troubled because of any demands to be made on us, for the new rules will not be retroactive; but we may well fear the competition of the products of future teaching, unless we ourselves become better grounded in the principles of ophthalmology and more fully equipped for its practice.

There is no specialty in medicine and surgery comparable to ours in scientific depths and in practical heights. The scientific principles can be found in their beauty and strength only by deep digging; the practical heights can be attained only by him who is willing to climb, and to keep on climbing, though he may have stumbled often.

Whether one gets into the practice of ophthalmology through the short route of the past, and straight because so short, or through the longer and devious road of the future, if he wishes for the best success, he must be a routinist as to methods and means. Routine in eye work does not mean that one should never change from a method, or plan, of work, unless that method, or plan, be perfect. One routine should be to change from worse to better at every opportunity. There are some perfected methods of doing eye work, and there are some means at our command that cannot be improved. I wish I might be able to say this of all methods and of every means; but this cannot be said until ophthalmology, both as a science and as an art, has reached perfection.

*Chairman's address, read before the Section on Eye, Ear, Nose, and Throat at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

The relationship between the practitioner and the patient sometimes begins when the one has never seen the other, the medium between the two being the written letter. The letter, long or short, well written or badly composed, pertinent or impertinent, pointed or without point, demands an answer. The reply should disclaim any ability to make a diagnosis without a personal investigation, but should express a willingness to do everything possible for the relief of such condition as might be found on careful examination. Any suggestion as to "absent treatment" should be courteously declined as a thing improper and impossible. An early visit may be suggested or even urged, for the condition may be serious. Unless the patient's letter contains a direct question as to fee, the reply should make no mention of it. If there be a direct question as to the fee for examination and advice, the amount should be named for such preliminary examination as would justify a diagnosis and include a prescription if needed. The letter should state that the charge for a more extended service, or an operation, if necessary, can be learned before such service is rendered. It is better that this understanding should be had beforehand.

Uniformity in charges against those who are able to pay should be a fixed routine, whether the charge be named in a letter or spoken in person. "The same fee for the same service" is a splendid, practical motto. Any variation from this should be either a professional courtesy or an act of charity. The best charity in this respect is to allow the patient to pay as much as possible of the regular charge and then cancel the remainder. To charge a higher fee than usual because one may be rich is not good routine. It is not good even on the ground that this would enable you to do charity work for others. Charity thus paid for by another is no charity, hence would not be credited by the Recording Angel.

The majority of patients come without previous announcement, often with the family physician or bearing a letter from him. If the patient is poor or in moderate circumstances or rich, it is usually told. If poor and a charitable consideration is suggested, it should be heeded. No one can know the financial condition of a patient better than the family physician. Whatever may be the state of finances, the patient who

has been assured by the family physician that he or she will be properly treated in every respect is not likely to ask a question as to the charge until the service has been rendered. Letters from physicians should be acknowledged with thanks, and they should be told of conditions found and of treatment instituted for the relief of their patients. Many patients come without a letter of introduction and commendation.

In whatever manner patients may come, they should be courteously met at the door by the office girl, who, after seating them, should present them with a Keller book of perforated cards, every other leaf of which is nonperforated. Between the two leaves there should be a carbon paper, with the black face toward the solid leaf, with a pencil provided—better tied to the book. Each patient should be asked to write his or her name and address on the lowest card. The next patient should write on the next card above, and soon until every recent arrival shall have filled a card. Each name should be taken in the order of arrival. The names of attendants or chaperons should not be taken. Whether one or several names have been written, only the filled cards should be torn away. The next duty of the office girl is to place the cards, in the order in which they have been filled, under the double punch in such a way that one of the holes to be made shall be close to the right end of the card. On the same board with the punch there should be two uprights, with movable clips for opening and closing them. The cards should be filed, in their proper order, on the left upright, through the hole at the end of the name and close to the end of the card. As others arrive, the same order of procedure should follow. On this standard will appear only the names of patients not yet seen. The card that is lowest always belongs to the patient next to be seen. The best method of procedure now is to call, by bell tap, the office girl to your desk, while you pull the bottom card loose from the left standard. Reading the name and address, you direct the girl to bring that patient in, while you place the card on the right hand standard through the untorn opening at the other end of the card. Remembering the name, or glancing at it again, you are enabled to greet the patient by the name as she enters, and be seated near your desk.

This transference of cards from one stand-

to the other is made, as patient after patient is seen, until every one has been presented. As each patient is retiring, the proper entering of the fee should be made on the card, and either the word "charge" or "paid" should be written.

At each subsequent bell tap the office girl could bring the next patient, in order, from the carbon writing on the solid leaf, checking each name as the patient is sent in. But this is not the better routine. This would not insure your having looked at the name, for you may have failed to transfer that patient's card from the one stand-ard to the other; hence the failure to greet by name—a failure that would have a bad effect on a new patient and a worse effect still on an old patient. The main purpose of the carbon writing is that it may be referred to at any subsequent time, and for this reason every solid page should be dated at the top. At the end of every day, after transferring all charges to the blotter or daybook, the cards filed during the day should be thrown away.

The routine use of the Keller registration book produces the following results: (1) It insures the presentation of patients in the order of arrival; (2) it enables the doctor to greet the patient by name; (3) if the patient is an old one, the record may be looked into before the presentation; (4) it insures against failure to make the proper financial entry; (5) at the close of the day the exact number of patients may be known by counting the cards; (6) a permanent carbon copy of each day's record is kept for reference.

When in the consulting room, some patients will hesitate to take the offered chair until they know something about the cost of the consultation. One question sometimes asked is: "Do you charge anything for the examination?" This question, doubtless, is more often asked of oculists than of any other class of physicians, for the reason that so-called "oculists" advertise: "*Examinations free.*" The routine answer to this question should be: "If I did not charge, I would have to spend all my time treating curiosity." This statement, in such cases, should be immediately followed by the naming of the usual fee for a preliminary examination. Only rarely will such a prospective patient depart without a proper consultation.

A large number of patients, after being seated, will ask: "Doctor, what will be your charge for finding out what my condition is, and

what ought to be done for me, for I am not sure that I will want treatment to-day." They should be told the usual fee, which should always be uniform, and this charge should include a prescription, should the condition call for that only. If this investigation is carefully made, in a routine, but thorough, manner, the patient will be ready and willing to submit to whatever subsequent procedure may be advised, as soon as the fee for same may have been named, whether it be the fitting of glasses, operations on the muscles, or other operative work.

A still larger number of patients will indicate that their chief desire is to know the nature of their cases and to obtain relief, willing to leave the matter of fee for the final consideration, having the conscious assurance that they will not be overcharged, and this confidence should not be abused.

Whether a patient belongs to one or the other of these three classes, or even if the patient be known to be penniless, the same conscientious, careful consideration should be given to every detail of the investigation. The oculist should be a good listener; for, whether necessary or not, the patient believes that the story of suffering and other facts of personal or family history should be told. Routine listening is not damaged by a question properly propounded. The question may impress the patient that your interest is deepening. The patient's story may be cut short by a very simple little procedure, which may not always be necessary, but, because of its effectiveness, should be practiced. It is the pulling down of the lower lid, first on one side and then on the other, accompanied by a look into the lower conjunctival fold. If this is found perfectly healthy, there is but little need for everting the upper lid; but if the lymph follicles are enlarged, the upper lid should be turned to ascertain if trachoma bodies are present. One can then proceed with the investigation, the patient now being pleased to answer questions only. The presence of a pterygium, corneal ulcer, scar, or opacity can now be noted. The size of the pupil and its reaction to light should be observed. The pupil may be found black or hazy, as in cataract. No comment should now be made on any of these observations. If small, inactive pupil, circumcorneal, or even general, redness, with lachrymation, pain and dread of light should indicate iritis, the touchstone of the investigation

should be applied—atropine solution instilled—and the patient should be sent to some dark corner to await the effect. No dilatation at all, or irregular or jagged dilatation, now justifies the diagnosis of iritis. Not only the diagnosis, but also the seriousness of the disease, should be told; and the routine treatment should be instituted.

Should the pupil be dilated, inactive, and apparently greenish, whether redness or pain exists or not, glaucoma should be suspected. Increased tension, whether shown to the fingers or by the tonometer, would make the case more suspicious; but the diagnosis should not be given until the ophthalmoscope has revealed the cupped disc. In giving the diagnosis, the gravity of the condition should be mentioned to either the patient or to a relative or near friend. The acuteness of vision, if any, should be noted. As in all others, the case history should be taken. Treatment suited to the case should be instituted. Operation must be done if the case is acute, and may be done if the case is subacute or chronic. Every operator should select that method of operating which appeals to him most, and should do it routinely—if trephining, by all means trephine; if LaGrange's operation, do it constantly; if the modified LaGrange—the cutting off of the corneal lip—do it; if the iris-incarceration operation, do it; if the Graefe broad iridectomy, do it. As for myself, I prefer the modified LaGrange; and the more often I do it, the better able I am to do it and the more successful I will be in my results.

To outline my routine in connection with other diseases would make this address entirely too long. My main purpose, from the beginning, was to outline and emphasize the importance of routine work in detecting and correcting errors of refraction and muscle errors.

In a given case we have found no evidence of the existence of any ocular disease. The patient has given a history pointing more or less strongly to some visual defect.

Routine work of investigation should now begin. If not already seated between the refraction case and the phorometer, the patient should be so placed. The card of test letters should be immediately in front, and distant twenty feet. The patient should now be asked to read with the two eyes the smallest letters possible to her. The result should be noted. Then each eye

should be tested alone in the same manner. The fact that vision with each eye alone is 20-20 is no evidence that hyperopia does not exist and that astigmatism is absent; but myopia and high degrees of astigmatism have been eliminated. The next routine step should be to prove the presence or absence of hyperopia, and this is done by holding a pair of spheres, +2.00 D, before the eyes and noting the acuteness of vision through them. If vision is 20-20 through these lenses, there is a high degree of hyperopia; and if better than 20-100, there is more or less hyperopia present in one or both eyes. In a case of this kind astigmatism of low degree may be easily detected by means of a pair of +.50 D cylinders. If, with the axes vertical, the vision is more acute than when they are horizontal, there is astigmatism according to the rule; if with these cylinders with axes horizontal, vision is more acute than when vertical, there is astigmatism against the rule. If, without lenses, vision is low, it may be due to a very high degree of hyperopia, which would be shown by the fact that vision is improved by strong plus spheres; or it may be chargeable to myopia, which will be shown by more acute vision through strong minus spheres; or the low vision may depend on high degrees of astigmatism, which will be shown by increased acuity of vision through strong cylinders, either plus or minus, with their axes in certain positions.

The routine of the preliminary examination might end here if the ciliary muscles, as once claimed, were Pandora's box, out of which come all evils chargeable to the eyes; and proper steps might be taken at once to prepare the patient for the final examination, looking toward the correction of the focal errors just detected. If there is but one eye, the preliminary examination outlined above is the beginning and the end. Not so when there are two eyes. Not to go further would mean failure in a large percent of cases.

The routine worker now turns from the trial case to the phorometer, with confidence that his findings will help him to render better service to his patient.

A word as to the phorometer itself before putting it to routine use. While on the floor in Denver, in 1898, discussing the method of determining heterophoric conditions, I stated that the perfect phorometer has not yet been invented, but when invented, it would be built on the principle

that the retinal image in one eye should be undisturbed throughout any given test of the other eye; that no binocular phorometer is trustworthy. Hesitating a moment, I said: "At this very moment the monocular phorometer has taken form in my mind, and as soon as I return home I will have it made and put to the test." Many of you are acquainted with that device which was made, at my suggestion, by F. A. Hardy & Co. in the early fall of 1898, since which time, until recently, it has had no rival as a monocular instrument. While, through the years, many have been convinced that the monocular principle is the correct one, and that the monocular phorometer is the only one worthy of trust, many others have held on to the binocular idea and have used only the binocular instrument. The day for the discard of the binocular phorometer has come, and the monocular phorometer is here to reign for all time. The day of retirement of my own monocular phorometer has come, and likewise that of my cyclophorometer, which of necessity is a binocular instrument; but the principle stands forever. DeZeng has eliminated from his beautiful optophorometer the binocular feature, the only thing that ever marred his instrument. In its perfected state is in a monocular phorometer and a cyclophorometer in combination. Its beauty and utility are beyond criticism, and, at the risk of damaging it, I have brought it with me to show it. It is more beautiful than mine, more convenient of use, and just as accurate. With the DeZeng instrument all the tests of the two eyes, taken separately, can be made in six to ten minutes, including the record of the findings. It will quickly drive all binocular phorometers from the field.

Having said this much about the monocular phorometer, we can now take up the routine of its use. The test object should be a small point of light, though it may be the blaze of an ordinary candle. It should be distant from the patient twenty feet—practical infinity. The pupil must not be under the influence of either a mydriatic or a myotic, but the two eyes should be as set forth in the routine test for determining the presence or absence of focal errors, and, if present, their character. The uninfluenced pupils and ciliary muscles, throughout the preliminary test, are implied in the expression: "The routine worker now turns from the trial case to the phorometer."

With the DeZeng monocular phorometer turned into position, as if the optometer part was to be used, but with its cells empty, the spirit level should be regulated and one eye or the other chosen for the testing of the tonicity of the four recti muscles in the four cardinal directions only. Take the right eye, since in making records "O. D." is always written first. There should be nothing but empty space in front of the left eye, and this, throughout the test of the right eye, should be the fixing eye. The ten-degree prism should be turned into position, base in, before the right eye, which will throw the retinal image nasalward, outside the fusion area. The false object will be thrown directly to the right, and it should be perfectly level with the true or fixed object. If not level, it is because muscle tonicity has turned the eye either up or down, the false object having gone in the opposite direction. Want of levelness demands that the rotary prism should be turned into position, the rotary screw directly out, and the index of prism at zero. The prism is now so rotated as to bring the false object level with the true or fixed object. The extent of this rotation is noted; and if the false object had to be elevated, the note would read R. hyperphoria "so many" degrees; but if the false object had to be depressed, the reading would be R. cataphoria "so many" degrees. Either now or as well at the end of the tonicity tests of the recti muscles the proof test for hyperphoria should be applied. It consists of a Maddox double prism, 3 to 5 degrees each, to be held, base line horizontal, first before one eye and then before the other, allowing the patient to look through only one of the prisms at a time. Raising and lowering the prisms, the patient is asked to name the position which makes the false object nearer the true. If there is right hyperphoria, the false object will fuse with the true or be near it through the upper prism, but far removed when seen through the lower prism by the right eye. The reverse will be true when the double prism is moved up and down before the cataphoric eye. If the false and true objects are practically the same distance apart, as the double prism is raised and lowered before each eye, there is no vertical imbalance.

The ten-degree prism must now be turned out of the way, and the six-degree prism, base up, should be turned into position. The rotary prism is now turned so that the screw is directly up

and the index at zero. The retinal image for this eye is now displaced directly above, beyond the fusion area, so that the false object would appear below, and should be directly below the true or fixed object. If directly in line, there is lateral orthophoria for distance; but if not vertically beneath, the rotary prism must be made to move it into that position. The index will mark the extent of the rotation. If the false object had to be moved from the left, the record would read R. exophoria "so many" degrees; but if it had to be moved from the right, the reading would be R. esophoria "so many" degrees.

Again revolving the rotary prism into neutrality, the convergence test, by means of a dot without lines, must be made. The false dot standing directly under the true would show lateral orthophoria in the near, for the card on which is the dot should be held at the reading distance, with the dot in the horizontal plane with the eyes. Should the false dot not be in the vertical plane with the true dot, the rotary prism should be made to move it into that plane. If it had to be brought from the left, the reading should be R. exophoria "so many" degrees in the near; but if from the right, it should be recorded R. esophoria "so many" degrees in the near. Since this is the convergence test and both interni have received the same impulse from the convergence center, the record could leave out "R.," if it be the right eye under test—that is, if the false image belongs to the right eye; and the same should be done in the near test of the left eye. In either case want of convergence power would be recorded, "Exophoria in the near;" and excess of convergence would be recorded, "Esophoria in the near." The far and the near tests always correspond when the ciliary muscles have normal tonicity; they are always out of harmony when the ciliary muscles are wanting in tonicity or when they have excessive tonicity. The right eye having been tested, the left may be tested in the same manner and proper records made.

The recti muscles of both eyes having been tested as above set forth, the next step in the routine use of the phorometer should be to determine the presence or absence of cyclophoria, and, if present, whether plus or minus. To do this, the rods on both sides must be placed in front of their respective eyes, with the axes of the rods vertical, so that the streak of light may be horizontal for each eye alone. The six-degree

prism, base up, must be placed in position before one eye, so as to throw the retinal image of that streak entirely above the fusion area, the streak itself being below. If the two streaks are parallel, the obliques have normal tonicity. If these streaks diverge on the side opposite the prism, there is plus cyclophoria; but if they diverge on the side corresponding to the prism, there is minus cyclophoria. In either case the rod in front of the prisms should be so revolved as to make the two streaks parallel. The index will name the amount of the error, and the direction of its rotation will name the kind of error. The eye behind the displacing prism is the one under test. The one eye having been tested, its displacing prism should be turned out of the way, and the six-degree prism belonging to the other side should be placed for testing it. Usually when one eye shows plus cyclophoria, the other will show the same; and since this is the case, the record would read plus (or minus) cyclophoria "so many" degrees, leaving out the letters "R" and "L."

Immediately following the tonicity tests of the twelve ocular muscles and the taking of the convergence power of the interni, the duction power of each individual muscle should be ascertained. The routine order should be: First, superduction; second, subduction; third, abduction; fourth, adduction; fifth, minus cycloduction; sixth, plus cycloduction. In taking the duction power of the recti muscles, the rotary prism alone is necessary, and this before one eye only. The test object should be a point of light or even a candle blaze. This testing of the recti muscles should be in the four cardinal directions only. For the vertical ductions the screw of the rotary prism must be horizontal and the index of prism must be at zero. Rotating the apex of the prism up, the retinal image of the test object is being moved downward. The superior rectus makes the macula keep pace with the moving image to the extent of its power, thus preventing diplopia. The point reached by the index at the moment diplopia occurs is the measure of superduction which should be noted as "so many" degrees R. (or left) superduction. Returning the index to zero, the apex should now be rotated down which carries the retinal image upward, the inferior rectus compelling the macula to keep pace with the moving image so long as possible, thus preventing diplopia. At the moment of diplopia

the index points to the degree mark of subduction, to be noted as "so many" degrees of R. (or L.) subduction.

Moving the screw into the vertical position and placing the index at zero, the phorometer is ready for taking horizontal duction, both right and left. Rotating the prism apex out, the retinal image in that eye is made to move directly nasalward, while the external rectus is compelling the macula to keep pace with the moving image in the interest of binocular single vision. At the moment of diplopia the index points to the degree of abduction for that eye, and the note should be made "so many" degrees of R. (or L.) abduction. Returning the index to zero, the apex of the prism should now be rotated nasalward. This will cause the retinal image to move directly outward, but the internal rectus will make the macula keep pace with the moving image to the extent of its power, and up to this limit there will be binocular single vision. When the rotation passes the limit of power, diplopia at once manifests itself. The index will then stand at the point marking the extent of the rotation of the eye, which should be noted as "so many" degrees of R. (or L.) adduction.

The duction power of all the recti of one eye having been taken, the rotary prism for that eye should be turned out of the way, and that for the other eye should be placed ready for action. Precisely the same steps should be repeated in determining the duction power of its four recti. The same records should be noted as in connection with the tests of the muscles of the other eye. The results of these tests must be compared with what is known to be the normal duction power of these several muscles.

In taking cycloduction, the rods only must stand before the two eyes, and their axes must be vertical. The rods should be the same color on each side, for otherwise the fusion effort on the part of the obliques would fall short of the normal to them. Only one rod should be rotated at a time. Rotating the axis out tests the power of the inferior oblique of that eye. The instant that the streak of light doubles, the rotation should cease. The index now points to the degree mark on the scale, showing the extent of the wheel-like motion effected by the inferior oblique of that eye, and should be noted "so many" degrees of R. (or L.) plus cycloduction. The axis of the rod having been returned to zero

for a moment's rest, it should now be rotated toward the nose up to the point of doubling the streak. The index at this point indicates the extent of the wheel-like rotation effected by the superior oblique of that eye, and it should be noted as "so many" degrees of R. (or L.) minus cycloduction.

The cycloduction of the one eye having been taken, the rod before it should be set in the vertical, and the rod before the other eye should be rotated first out, for determining its plus cycloduction, and then in, for showing the minus cycloduction. These cycloductions should be compared with what is known to be normal.

It should be clearly understood that cardinal ductions are measured in "degrees of prism," while cycloductions are measured in "degrees of arc."

If the tonicity tests and the duction measurements are so nearly normal that no operation would be indicated, the preliminary examination may end here.

The tonicity tests having shown a high degree of heterophoria, routine would call for the placing of a deep-red glass before one eye. Should this cause diplopia, the case is clearly one for operation. The cardinal versions should now be taken, either by means of the tropometer or the perimeter. Oblique versions need never be taken. The cardinal versions should be noted—up, down, right, left. "Superversion," "subversion," "abversion," and "adversion" are all good terms and in harmony with other nomenclature. In order to reach a correct conclusion as to what muscle should be operated upon in a given case of heterophoria, and whether the operation should be a partial tenotomy of the stronger muscle or a shortening of the weaker muscle, one or both, the tonicity, duction, and version tests must all be compounded, and each test must be given its proper value.

If a given case is one of heterotropia, the tonicity and version tests only are possible. Duction is out of the question, because of the absence of binocular single vision. Vision in one eye may be so low as to make the tonicity tests very difficult, if not impossible; but they should be attempted in every case. In this a red glass in front of the dull eye will be helpful. Version tests are not so important in cases of heterotropia as in cases of heterophoria.

The most important step in the study of any

case of heterotropia, unless one of the eyes is mentally blind, is the fusion test. If the two images cannot be brought together by the rotary prism, binocular single vision can never be established by any operative procedure. This is especially true of squinting eyes, with vision about as good in one eye as in the other—cases of antipathy to binocular single vision.

When one eye is totally blind or absent, the preliminary test is a very short one and consists in first placing a +2.00 sphere before the seeing eye and thus determine if it is hyperopic, or a —1.00 or —2.00 to determine if it is myopic, and next hold a +.50 cylinder, axis first vertical and then horizontal, to determine the absence or presence of astigmatism.

Now the patient is ready to be sent into the waiting room to be prepared for the final examination. The routine use of homatropine, gr. viii to distilled water one fluid ounce, for putting at rest the ciliary muscles, is the most satisfactory agent, both to the patient and to the practitioner. One drop in each eye every three to five minutes until ten drops have been instilled into each eye should be the rule in all patients under forty-five years of age. From the age of forty-five to forty-eight, five to seven drops would be sufficient. Beyond forty-eight, one drop should be put in each eye. Patients will often plead that "drops" be not used, not understanding the "why and wherefore." If the explanation is not accepted, declination to further investigate should be made. They will say, sometimes, that opticians claim that "drops" are not necessary, but even harmful. This should be met by the statement: "Any work done without the drops is *guesswork*, and this I cannot afford to do. I cannot do the further work unless you submit to the use of the drops, nor can anybody else do it as it should be done without them. They are not harmful." The necessity for enforced rest of the ciliary muscles in those under forty-eight years should be made clear, and the importance of detecting disease processes in the older should be emphasized, a wide-open pupil being essential for this. Rarely will one refuse to submit.

The routine of drops having been completed, the patient is ready to be returned to the consultation room for the final examination. While the ophthalmometer might have been used as a part of the preliminary examination, since its findings are not altered by the mydriatic, it seems

better to use it immediately before resorting to the trial lenses. The value of the ophthalmometer is now universally conceded, which consists in locating the axis of the astigmatism and in showing the quantity usually within .50 D. The skillful use of trial cylinders a little later will show if lenticular astigmatism is a complication. The ophthalmometer findings should be noted as made. Retinoscopy in children and in the unlettered is essential, and is of value in all cases.

While the room is darkened, other patients in process of preparation by the mydriatic, in whatever stage, should be brought in and measured with the ophthalmometer and then returned to the waiting room, to be recalled in the same order later.

Now the trial case must be appealed to as a finality in order that proper lenses may be ordered. With the trial frames properly placed, the opaque disc should be placed before the right eye. The letters called with the left eye shows the unaided acuteness of vision for that eye. If worse than the vision shown in the preliminary test, the appeal must be made to the plus lenses; if no worse than the vision shown in the preliminary test, minus lenses, spherical and cylindrical, must be resorted to.

I would have you review the test case for a moment as to the arrangement of the lenses. The cylinders all have their handles at 35 degrees to the axis, those in one row being to the right of the axis and those in the other row to the left of the axis. The former should all be in the right-hand row, and the latter all in the left-hand row. For this arrangement of handles we are indebted to A. E. Prince. The convex cylinders in the right row should be used in testing the left eye, and those in the left row for testing the right eye in astigmatism according to the rule. When these cylinders are thus placed, with axes at 90 degrees, the handles will be up and out 35 degrees. The concave cylinders in the right row should be used for the right eye, and those in the left row for the left; for thus used, when their axes are at 180 degrees, the handles will be up and out 35 degrees. In astigmatism against the rule the order of use would be reversed. The full diopter spheres and cylinders in all the right-hand rows should have their handles turned to the left, which adds greatly to the convenience of handling both the full and fractional lenses.

Hyperopia being suspected, in the front cell

should be placed the plus cylinder indicated by the ophthalmometer, less .50 D, with its axis in the position located by it. In the back cell should be placed, by guess, the plus sphere indicated by the acuteness of vision through the cylinder only. Now with a +.50 D in the left hand and a —.50 D in the right hand, they should be held alternately in front of the combination already in the frame for determining if the first sphere must be increased in strength or must be made weaker. Thus proceeding, it is not long until the sphere of proper strength has been found. By means of either a +.50 cylinder or a —.50 cylinder it may be shown quickly if the original cylinder is of proper strength or must be made stronger or weaker, and by use of the two it may be shown if the sphere must remain the same as already shown or be changed in harmony with a change in the strength of the cylinder.

The left eye having been thus tested, the opaque disc should be placed before it in the extra cell in front of the cylinder, and the test of the right eye should be accomplished in the manner outlined in the correction of the left eye. The combinations determined by the trial lenses and the acuteness of vision obtained should be recorded. The pupillary distance and the bridge measurement must be accurately taken and recorded. If the patient is forty-five or older, the presbyopia for the given age must be entered. These things are all to be done without consulting the will of the patient; but in the choice of frames, both as to character and quality, the patient's desire must be gratified.

When ready to write the order for the glasses, the record as a whole must be studied. Should two cases be exactly alike as to spherical correction, but different as to adjustment of the lateral muscles, one esophoric and the other exophoric, the plus correction for the former should be full, but for the latter a deduction should be made from the plus correction. The reverse would be true of the same two cases if minus sphericals stood in the record and the lenses are intended for near use. A full minus correction is always proper for distant wear. In making the order, the strength of the astigmatic correction should be accurately copied in all cases. If there is a hyperphoria of quantity too slight to demand operation, the lens for the hyperphoric eye should be ground on a prism of proper strength, base

down. The lens for the cataphoric eye should not be prismatic. Esophoria and exophoria, not requiring operation, should be helped by making both lenses prismatic to an equal extent, the bases for the former being out and for the latter being in. This could be done by adding to or taking from the pupillary measurement, by decentering the lenses in or out, or by having each ground on a proper prism. While the record should be copied as to the strength of required cylinders, a complicating cyclophoria would justify a slight change of axes. If there is plus cyclophoria and the record shows plus cylinders converging, they should be ordered less converging; but if diverging, the order should call for greater divergence. The variation, however, should rarely be more than 5 degrees for each cylinder. In cases of astigmatism against the rule, in changing the axes of plus cylinders, the reverse of the rule given above, known as the N. C. Steele rule, should be observed. In either case, should the cylinders be minus, the reverse of all said above about plus cylinders would be the order.

The patient should be told that high degrees of a muscle error, or any combination of muscle errors, demand operations. A moderate want of tonicity of the recti muscles may be remedied by rhythmic prismatic exercise, while such a condition of the obliques may be cured by the same character of exercise by means of weak plus or minus cylinders so placed as to call into action the weak obliques. Deficient convergence power should be treated by candle exercise—moved from arm's length to a point seven inches from the eyes, also rhythmic in character. Want of ciliary power should be remedied by exercise with weak minus spherical lenses.

There are some important points about bifocals which should be routinely observed in making the order. Bifocals should never be given if there is much difference in the spherical refraction of the two eyes, for such patients must learn to look through the lens centers both in far and near seeing. Perfection bifocals and the Franklin divided lenses have the advantage over all others in that the cutting can be done, and should be done, so that the centers of the upper and lower parts may coincide. In these combinations the eyes *glide* from one part to the other. In the fused and cemented bifocals the centers of the upper and lower parts cannot coincide;

hence in passing from one to the other the eyes must *jump*. In any form of bifocals the centers of the reading lenses must be on the same horizontal lines; otherwise comfortable near work through them cannot be done.

After lenses have been finished, they should always be inspected; and if any error has been made in grinding or cutting, it should be corrected. One of the most important things in the inspection is the proper centering of lenses, whether for distant or near use; and especially is this important as to the reading part of bifocals of whatever kind.

One of the most important things in the whole routine of eye work is the delivery of the lenses to the patient, which should never be done without explicit instructions on two points: (1) A straight edge should always pass through the four joints of spectacles, or should coincide with the long axes of the eyeglasses; (2) whether the lenses are in spectacle frames or eyeglass tracings, they must always be level in front of the eyes and equally distant from them; and if inclined at all, this should be slightly out at the top.

Many a complaint comes to an oculist either because these points have not been impressed or because they have not been observed. If a patient should ask for a guarantee (which should never be granted), the above rules should be doubly or trebly impressed.

There is nothing simple about the work of correcting visual defects and muscular deficiencies, and it should be unlawful for any one to engage in this practice who is not educated medically and scientifically.

DISCUSSION ON DR. SAVAGE'S ADDRESS.

DR. WALTER DOTSON, Lebanon: Will you permit me to ask a question or two?

DR. SAVAGE: Yes, sir.

DR. DOTSON: Do you use these cards as a routine in all cases?

DR. SAVAGE: Yes, in every one. As I stated in the address, the versions need not be taken unless we are going to operate. They might be taken as a matter of interest and noted. In every other respect the routine as outlined should be carried out.

DR. DOTSON: I was wondering if you used these in all cases, why would this other card be necessary?

DR. SAVAGE: The patients write their names on the other cards, and the carbon copy is on the leaf below the card. The cards are brought to me and filed, the patients to be called in the order of arrival.

DR. DOTSON: I should think, if you use all of this routine, you would not see more than two patients a day.

DR. SAVAGE: All of the tests except the versions can be taken in from six to ten minutes—I mean all the preliminary tests. I have timed myself many times, and it does not take any longer than I have stated. The second series of tests takes more time.

DR. DOTSON: In what percentage of cases do you prescribe prisms for the correction of these phorias?

DR. SAVAGE: The percentage is quite large, so far as the vertical errors are concerned. It is much smaller in lateral errors. The lateral errors can be managed by the regulation of pupillary distance, as a rule. That feature I also brought out in the body of the address.

DR. E. C. ELLETT, Memphis: I think it is important that these questions should come up for discussion sometimes to the exclusion of operative measures and of other things we are comparatively seldom called upon to do.

There are one or two little points that have appealed to me about the trial frame in regard to the cylinders. Instead of having the cylinders made as these are made, I find it is a great help to have the cylinders with the axis marked by a good-sized hole drilled halfway through at each end of the axis and filled with white cement, which is quite as easy to see as a ground area; and that is quite a point when you have reached the fatal age of presbyopia.

Another thing is the use of a simple cylinder in the checking of your refraction—a cylinder with a handle on it at 45 degrees to the axis. The idea of the handle is this: that by simply turning it over in the finger you change the axis to one at right angles. Let us take an example. Suppose you have a +1 with +1 Cy. Ax. 90° in the trial frame—i. e., you have a +1 in the vertical meridian and +2 in the horizontal meridian. By placing in front of this a +.50 Cy. Ax. 90°, you change the correction to a +1 combined with a +1.50=90. By placing the +.50 Cy. Ax. 180° in front of the trial frame, the correction is changed to +1.50 with +.50 Cy. Ax. 90°. A -.50 Cy. Ax. vertical changes the correction to +1 with +.50 Cy. Ax. 90°; a -.50 Cy. Ax. horizontal changes it to +.50 with +1.50=90°. By using .25 cyls. or 1.00 cyls., corresponding changes are produced.

I have not been able to do anything with the cross-cylinders. The foregoing is what people think the cross-cylinders do; but if you figure it out, they do not do that at all. Yet we see articles describing cross-cylinders to the effect that they produce these changes.

DR. SAVAGE (closing): I did not mention cross-cylinders in my address, simply because I thought it was a subject not worth mentioning.

Reports received at the Secretary's office are to the effect that most of our county societies have held regular meetings throughout the summer. A few have been inexcusably inactive.

THE SOLAR TREATMENT IN AFFECTIONS OF BONES AND JOINTS.*

BY WILLIS C. CAMPBELL, M.D.,
Memphis, Tenn.

Local heliotherapy, or exposure to the sun's rays of indolent ulcers, fistulæ, tubercular joints, and certain chronic skin affections, is a well-known measure, which is not under discussion. It is my purpose to deal only with general heliotherapy, or the systematic exposure of the nude body without regard to local disease. Fresh air and sunshine as therapeutic agents have been known since ancient times, as shown by the writings of Herodotus (431 B.C.) and Hypocrates (212 B.C.), while Greek heliosis and the Roman Solarium are described by the historians. However, the recent conception of heliotherapy is largely due to Rollier, of Leysin, Switzerland, who very modestly calls attention to the use of the sun as a curative agent by many others prior to his time; but no one in the past has so persistently carried out this tedious method as to demonstrate the real value by producing results in a large number of cases heretofore inconceivable. Besides, he has devised a systematic procedure on scientific lines for which he well deserves to be called the "father of modern heliotherapy."

Bonnet, of Lyons, in 1845 used heliotherapy in the treatment of tubercular joints; but to a large extent only affected parts were so treated. Later Poncet and Ollier continued the work of Bonnet, though no great attention was given the method until the report of Rollier's special technique and results during the past ten years. He established a sanitarium at Leysin, Switzerland, in 1903, making his first preliminary report in 1904 before the Swiss Medical Association. In 1913, before the International Congress, he reported 804 with closed tubercular lesions, 703 cured, 73 improved, 22 stationary, 6 died. Of 328 with open fistulæ, 248 were cured, 39 improved, 19 stationary, and 25 died.

Rollier considers high altitude of great advantage on account of light and atmospheric conditions, though many other observers regard any place with sufficient sunny days equally satisfactory. Personally, I have been very successful in a number of cases in Memphis and vicinity, practically at sea level.

Heliotherapy is extensively used in Europe on account of the large number of established institutions for the treatment of surgical tuberculosis. As far as I can ascertain, I demonstrated the first cure by general heliotherapy in America before the Memphis and Shelby County Medical Society in November, 1913, and later before this association in Memphis, April, 1914, since which time I have reported a number of others.

Rollier exposes the entire body to solar rays from five to seven hours per day in both winter and summer, beginning by insulating small areas, which are increased daily until the patient is exposed in the nude state. At the same time, rational orthopedic measures are faithfully carried out in all affections of joints and of the spinal column.

Rollier regards the ultra violet or actinic rays as the curative agent; but so far no one has proven the therapeutic or physiological action, though many theories have been advanced. Consequently the method for the present must be considered as purely empirical.

In 1912 I first used the solar treatment at the Memphis City Hospital in a few tubercular joints, which was most unsatisfactory on account of the lack of coöperation on the part of the hospital and the patients. In February, 1913, I was able to apply the method systematically and continuously in an apparently hopeless tubercular spine and hip in a man aged 22, 6 feet 3 inches in height, weighing only 75 pounds. When he entered the hospital, he had been ill about one year, and a large fluctuating abscess was conspicuous on both sides of the lumbar spine. The diurnal range of temperature was from 100 to 105 F.; skiagrams confirmed diagnosis. The abscess was incised, and a large quantity of thin pus escaped; but there was no cessation in symptoms. When insolation was begun, snow was three inches deep on the ground, and the temperature was 24 F. Within six weeks general improvement was marked, and at the end of five months and ten days the patient had gained 110 pounds in weight, and no symptoms of a tubercular spine or hip existed. Since this time three years have elapsed, with no recurrence, though no after treatment was used.

The improvement in my first case was so marked that I at once instituted the method on the orthopedic service of the Memphis City, Baptist Memorial, and Lucy Brinkley Hospitals, and

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

later at St. Joseph Hospital and the Home for Incurables. During the past three years I have applied heliotherapy in over 75 cases, and each year have become a more enthusiastic advocate of the sun treatment. A large per cent of my cases were tubercular, but quite a number were other affections of bones and joints. The clinical improvement in many instances is indescribable. There is a gain in flesh, increase in hæmoglobin and erythrocytes, while on the local process there is an increase in rate of evolution and a sclerogenous action on diseased tissue, as evidenced by the X-ray. In cases with fistulæ the discharge is at first purulent and increased in amount, but later becomes serous and more scant as healing takes place. I have seen closure of sinuses which have persisted for years after a few months' insolation.

Orthopedic measures in conformation to the affected part are essential to success, but all appliances should be so devised as to either allow exposure of the entire body or to be removable at the time of insolation. Unless this is strictly enforced, deformity will be the inevitable result, as well as less forcible action in the diseased area.

In instituting exposures it is unnecessary to consider the part affected, but only the surface of the entire body. In order to simplify matters, I usually begin at the feet, increasing surface and time of insolation until the entire body is exposed from five to ten hours per day. The greatest care must be given to avoid blistering, which may seriously interrupt in grave cases.

Pigmentation indicates that the treatment has been both properly and satisfactorily carried out. No improvement is apparent until pigmentation is established, the depth of which depends on the type of the individual. In brunettes a deep, almost mahogany brown should be maintained; otherwise the treatment is inefficient.

Successive skiagrams will show that the evolution of the disease is hastened. Necrosed areas rapidly disintegrate and disappear, while the adjacent bone becomes more dense, and the inflammatory exudate about the diseased area is gradually absorbed. In favorable cases the X-ray will show a greater change in six months than in years by the older methods.

The length of time necessary to effect a cure in tubercular lesions naturally depends on the part affected, extent and duration of disease, and complications; but, from my limited experience,

I believe that every case should receive at least eighteen months' continuous insolation, though I have had perfect cures in less than six months. Some cases will undoubtedly require years, while others may never respond successfully.

It is not alone the effect on the local process, as evidenced by the arrest of symptoms, but the action of a given measure on the tubercular individual, that should be considered. Undoubtedly with the older procedures many have been permanently cured, and many have recrudesced years later, while a number have had recurrences in other organs, as the testicle, lymph glands, lungs, etc. Statistics of these are not forthcoming. No one who has consistently applied the older methods and heliotherapy could avoid seeing the relatively greater value of the latter, not only clinically, as evidenced by increase in weight and stability of tissues, but the X-ray also shows a vast difference. The operative treatments of Albee and Hibbs are advanced, and excellent methods of fixation in Pott's disease which I have used in the mid-dorsal region as an adjunct to heliotherapy. I have done these operations in nine cases, but the great improvement in general conditions or the increase in bone density do not compare with those treated by the solar rays.

On account of the nature of all tubercular affections, one should be most conservative in reporting results. Of thirty tubercular cases which have been exposed sufficient time to consider effect of treatment, twenty-five have responded favorably, while five should require further insolation. Ten of the twenty-five are apparently cured. The tabulated results are as follows:

Case. No.	Age.	Seat.	Insolation	No recurrence after—
1. Man	22	Spine and hip	5 1-3 months	3 years
2. Boy	5	Mid-dorsal	6 months	1½ years
3. Girl	3	Hip	6 months	2½ years
4. Boy	5	Upper dorsal	6 months	1½ years
5. Girl	7	Hip	6 months	1½ years
6. Boy	2½	Upper dorsal	6 months	9 months
7. Negro girl	5	Mid-dorsal	6 months	9 months
8. Negro girl	8	Knee	6 months	9 months
9. Girl	8	High cervical	8 months	6 months
10. Woman	32	Mid-dorsal	9 months	6 months

There has been no evidence of recurrence in a single instance, though no braces or supports were used in 8 as an after treatment.

I have found heliotherapy not alone efficacious in tubercular lesions, but also in many other affections of bones and joints, ten of which were intensely septic conditions not relieved by drainage, and I believe that the solar rays might prove successful in general sepsis from any source.

In conclusion, I desire to emphasize—

1. That heliotherapy (as advocated by Rollier) is by no means a simple measure to be lightly intrusted, but must be carefully and scientifically carried out directly under the supervision of one experienced with the method and with necessary orthopedic measures.

2. That a most careful adjustment of orthopedic appliances is essential to healing of the process and the prevention of serious and unsightly deformities and malformations.

3. That skiagrams should be made at regular intervals, which will indicate the effect of treatment by the changes in the bone.

4. The solar rays not only cause improvement in the general condition of the patient, but definite curative action on the local process as evidenced by the X-ray.

5. That improvement of the patient is synchronous with pigmentation of the skin.

6. The marked and decided beneficial effect on acute nontubercular septic conditions, and also tubercular lesions secondarily infected.

7. That consistent espionage is required on the part of the surgeon to obtain perfect coöperation on the part of the patient.

DISCUSSION ON THE PAPER OF DR. CAMPBELL.

DR. W. A. BRYAN, Nashville: This subject is of great importance to us as surgeons, for the reason that we have been in the habit of mispracticing on "tubercular surgical lesions," as they are called. To get clearly before you what I mean, I will say that we have been in the habit of operating on cases of tubercular peritonitis and leaving the patient and family more or less under the impression that we have done all that could be done for the patient. We have been letting these patients go home without any further attempts at treatment or after care, thus getting poor or unsatisfactory results. We have been operating on hip-joint cases and thigh cases; we have been operating on bone cases and on cases in which the glands of the neck have been involved; we have been operating on cases of tuberculosis of various organs and tissues of the body that commonly go under the name of "surgical tuberculosis," and leaving the impression upon the people that all has been done that could be done without further giving these patients to understand that they need after a surgical tubercular lesion the same after care and attention as patients with a pulmonary lesion. That is the mistake we have been making in this work.

Rollier began to make his work felt in 1903, when he gathered the idea that sunshine represented the sum total of treatment for surgical lesions produced by tu-

berculosis; so that he has been considered by some a crank on this subject. You would gather from reading after him and from hearing some of us talk after him, as I have seen happen more than once, that he thought the sum total of treatment was sunshine.

Now the truth of the matter is, there are various things, as Dr. Campbell has indicated, that are beneficial in the treatment of tuberculosis in general. There are various things that are beneficial in the treatment of tuberculosis of the so-called "surgical type." These various things all of us know. We know that a patient who has tuberculosis needs rest; we know that a patient who has tuberculosis must have fresh air and a certain amount of food of a certain kind that must be nourishing. We know that tuberculin does its part; we know that surgery does its part; and that part which we have been trying to do has been overestimated, and I think the biggest factor of treatment in these cases—namely, sunshine—does its part when it has been used as the doctor has indicated.

I do not think I can give you any better or clearer idea of the subject of surgical tuberculosis than to repeat in substance a talk which I gave recently before the Nashville Academy of Medicine, and by reading extracts from Rollier's work. Somebody asked me if this work was reliable. There are practitioners who doubt the reliability of the Bible; there are others who doubt the reliability of Dr. A and Dr. B, the President, and everybody else. I think it is as reliable as scientific medical papers usually are. It stands at the head of the list of German medical literature.

The total number of cases treated from 1903 to 1914 was 1,129 infants, 625 adults, and 477 children. Of the removal of closed tuberculosis, there were 804 cases; of this number, 703 were cured, 73 improved, 22 remained stationary, and 6 died. Of open tuberculosis, spontaneous or otherwise, as a result of surgery, there were 325 cases, 242 of which were cured, 39 improved, 19 remained stationary, and 25 died. Spondylitis without abscess, 102 cases were admitted, 90 were healed, 10 improved, 1 remained stationary, and 1 died. The one that died was admitted with complete paraplegia and cystitis. Spondylitis with abscess, 68 cases admitted, 64 healed, 2 improved, 1 remained stationary, and 1 died. This latter case was admitted with severe pulmonary tuberculosis. Spondylitis with abscess and secondary infection, 28 cases admitted, 17 healed, 6 improved, 3 remained stationary, and 2 died. The patients who died came with multiple tuberculosis and were in an extreme condition. Of 199 cases of spinal tuberculosis, 171 healed, 18 improved, 5 unimproved, and 4 died. Of tuberculosis of the bones of the pelvis without abscess, there were 6 cases admitted and 6 healed. With abscess, 10 cases admitted and 10 healed. With abscess and secondary infection, 21 cases were admitted, 9 were healed, 1 was improved, 6 remained stationary, and 5 died. Tuberculosis of the hip without abscess, 83 cases, 76 healed, 7 improved, and none stationary. With abscess, 36 cases admitted, 29 healed, 5 improved, and 2 remained stationary. With abscess plus septic infection, 39 were admitted, 20 healed, 9 improved, 3 remained stationary, and 7 died. Of hip

cases, 158 were admitted, 125 cured, 21 improved, 5 remained stationary, and 7 died. That makes 125 out of 158 hip cases cured. What about the joints? In 102 of the 125 cases cured, the joint function was reestablished. Tuberculosis of the knee without abscess, 94 cases admitted, 85 cured, 7 improved, 2 remained stationary. With abscess, 14 cases admitted, 12 healed, 2 improved. With secondary infection, 12 cases admitted, 9 healed, 1 improved, 1 remained stationary, and 1 died. One died of hemorrhage. Of 120 knee cases, 106 were cured—that is, what he calls healed. Of the 106 healed, joint function was reestablished in 78. Tuberculosis of the foot without abscess, 35 cases, 33 healed and 2 improved. Tuberculosis of the foot with abscess, 17 cases admitted, 15 healed, 1 remained stationary, and 1 died. The one who died had brain abscess in consequence of alveolar infection. Tuberculosis of the foot with abscess plus secondary infection, 42 cases admitted, 39 healed, 2 improved, 1 remained stationary—making a total of 94 cases of tuberculosis of the foot admitted, with 87 healed, 4 improved, 2 stationary, and 1 died. In the 87 healed cases there was a return of joint function. Tuberculosis of the shoulder without abscess, 3 cases admitted, 3 healed. Tuberculosis of the shoulder with abscess, 4 cases admitted, 3 healed, 1 improved. Tuberculosis of the shoulder with abscess plus secondary infection, 5 cases admitted, 2 healed, 3 improved—making a total of 12 cases admitted with tuberculosis of the shoulder, 8 of which healed and 4 improved.

In 478 healed cases there was reestablishment of joint function. Tuberculosis of the elbow with abscess, 9 cases admitted, 8 healed, and 1 improved. With abscess, 6 cases admitted, 6 healed. With abscess plus septic infection, 15 cases admitted, 14 healed, 1 improved—making a total of 30 cases treated, 28 of which were healed; and in 20 of the 28 healed cases, joint function was reestablished. [Time called.]

DR. A. G. NICHOL, Nashville: I think Dr. Campbell has had the usual results as compared with others who have used this treatment scientifically. To successfully carry out the Rollier treatment, it is essential to have institutional care, because it is rather unusual. The public is not educated up to it, especially the mother; and as this disease frequently occurs in children, if you restrict the liberty of the child, you are liable to step upon the mother's toe, and you have as much trouble with the parents as you have with the child. In an institution where you can carry it out faithfully, undoubtedly you will get good results. The results, as far as function is concerned, as reported by Rollier, are much better than we could get in any part of this country, because people are educated much better as to the requirements in Europe than are our people. There they get the cases much earlier than we do. I do not think we get much function in a number of cases because of the great amount of destruction in the bones. The head and the acetabulum are eroded. I recall a case in which the neck and head were destroyed and the acetabulum twice the normal size. If we get these cases early, we will get satisfactory results from treatment.

Another point Dr. Campbell tried to impress is this:

That we must not rely on the Rollier treatment to prevent deformity, because irritation about the joints will invariably be followed by deformity unless orthopedic measures are carried out to protect the joint and prevent deformity. It is much better to prevent deformity than to find it necessary to correct it afterwards. That is a thing we should bear in mind; and I do not rely upon the Rollier treatment or any other treatment exclusively, but try to keep the part in as normal position as possible by orthopedic appliances. Within the course of time you will find this treatment will be not only universally used in connection with the joints, but with lung conditions and in cases of tuberculosis in other parts of the body.

Another thing: It is not only the diseased area, but the entire body should be exposed to get the full therapeutic value of the solar ray. I think the point in Dr. Campbell's paper of great importance is that we are not to neglect to protect the joint that is diseased, and in this way we will save future trouble for the patients.

DR. C. A. ROBERTSON, Ridgetop: When this question of heliotherapy was first brought to my notice, it did not appeal to me very strongly, because it was such a radical departure from our previous understanding of the treatment of these conditions. So I began to investigate what was really being done in this country in connection with the treatment of surgical tuberculosis. I visited an institution maintained by the city of Buffalo, and there found ample material upon which to base very satisfactory conclusions. This institution is under the care of a very able man, Dr. C. L. Hyde, who has been following with the closest detail the principles of sunshine treatment as enunciated by Rollier for several years. He is very careful—exceedingly careful—to maintain the Rollier technic in its minutest details. So careful is he that at considerable expense he has undertaken the translation of Dr. Rollier's work, which is soon to be published in English in this country. There I not only saw one case or half a dozen cases, but a great number of cases, which had been treated anywhere from six months to eighteen months, which conclusively proves the truth of the statements made by Rollier as well as Dr. Campbell; and if any of you who are sufficiently interested in the question will make this investigation as I did, I am sure you would become at once an enthusiastic convert to the treatment of these so-called "tubercular surgical lesions" by sunshine.

Dr. Pottenger, of Monrovia, Cal., has been applying the sun's rays to the treatment of pulmonary cases. We find also that sunshine is being rather extensively used at one of the beaches near New York, and they are getting results that are really astonishing.

Since the establishment of the Watauga Sanitarium at Ridgetop we have been carrying on the sunshine treatment, somewhat modified after the method of Rollier; and our results thus far have been very satisfactory indeed, and confirm every statement made by Dr. Campbell in his paper.

There is one feature in connection with the application of sunshine that I desire to emphasize which was mentioned by the essayist, and that is the dosage of

sunshine. We have plenty of it. It does not cost anything; but we are liable to become too enthusiastic about it, and, therefore, liable to give it in too large doses. An overdose of sunshine is a serious condition, and we should guard carefully against an excessive dose which will produce burning. A patient burned by the sun is injured—how permanently, I am not able to say; but I know there is a great deal of temporary harm done by an overdose of sunshine. The application of heliotherapy is not an easy matter. It means work; it means close scrutiny of the patient; it means detailed attention in order that you can get the patient accustomed to insolation to the extent that the patient will be able to remain in the sunshine for a number of hours. But he who would be willing to give careful attention and prepare for heliotherapy intelligently in accordance with the principles of Rollier will be rewarded with one of the greatest therapeutic results that he has ever received.

I want to thank Dr. Campbell personally for bringing this paper before the society. I have been interested in it, and I think it is a matter of very great importance.

DR. BROWN: In listening to these discussions I have not heard any one explain how this is to be used; and I would like Dr. Campbell to tell us if this method can be employed in country practice, and, if so, how.

DR. WILLIS C. CAMPBELL, Memphis (closing): A great many of these conditions which we have heretofore thought possibly amenable to surgical treatment, and so considered, need other therapeutic measures to effect a cure; and a great many other surgeons have been converted to the Rollier treatment besides Dr. Bryan.

A point was emphasized in the discussion which I brought out in my paper and which I will mention again—namely, that surgical tuberculosis will require the same hygienic careful treatment as tuberculosis anywhere else in the body, and we cannot expect to bring about a cure without the use of these adjuncts to operative treatment. One cannot cure the disease by inserting bone grafts without hygienic treatment, and this particular treatment seems to have a wonderful tonic effect—much better than anything that has been advanced.

Dr. Nichol spoke of the value of institutional care. It is true, that is valuable if we can have the patients in an institution for a long period of time; but it is not absolutely necessary, as I have successfully treated quite a number of patients in their homes. I have had thirty or more cases under treatment at their private homes. The cases under treatment in private homes are cases that have been in hospitals for a short period of time—say, one or two months. The advantage of institutional treatment is to teach people how to carry out the treatment. It is impossible to tell a patient to go home and carry out the treatment, and it is impossible to carry it out in private practice as many do.

I recently had a young man under treatment for tuberculosis of the knee in a private home. He was improving nicely. He was previously under the care of a local physician, who told me that he put on a bathing suit and ran out in the sun.

The dosage, as Dr. Robertson brought out, is to be given as accurately as any medical treatment; and the patient is to be watched carefully, otherwise he will be given an underdose or an overdose, and may have symptoms of malaise, loss of appetite; and the patient will rapidly go downhill if the proper dosage is not given in each individual case. After pigmentation is well established, let them go home, and they can stand from five to seven hours' insolation per day. One may take three or four hours a day, while others will take sun treatment for ten hours. Brunettes respond better than blondes, and red blondes do not respond as well as brunettes. These do not pigment uniformly.

I have read of Pryor's results, whose work has been referred to by Dr. Robertson, and their claim that they are not near so satisfactory as the results we get here in Tennessee. We know that the amount of wind and rainfall they have in the North is not adaptable to this particular type of treatment. Climate, I think, is an important factor; but I do not believe, however, that altitude has a great deal to do with it.

Dr. Brown has asked how this method of treatment may be used in private or country practice. It can be used in country practice by those who will give individual attention to patients three or four times a day and carry out the orthopedic end of the treatment. The orthopedic measures not only prevent deformity, but they tend to effect a cure. I do not think we will get results without orthopedic measures, because I have had cases where orthopedic measures could not be enforced properly, and they did not respond so well nor was the sun treatment so satisfactory as where orthopedic measures were also used.

THE PERCY CAUTERY TREATMENT OF INOPERABLE CARCINOMA OF THE UTERUS, WITH PRELIMINARY REPORT OF CASES.*

BY EDWARD T. NEWELL, M.D.,
Chattanooga, Tenn.

Cancer in general, and especially carcinoma of the uterus, is a subject of prime importance to physicians and surgeons alike. When we stop to think that one woman in every twelve that we know between the ages of thirty-five and sixty either has a carcinoma of the uterus to-day or will have one before she passes the upper-age limit, you fully realize the importance of this subject. I believe that most of you do appreciate the gravity of this subject and the importance of early diagnosis and treatment. So much has been said and written along these lines in the last few years by medical men, as well as the lay

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

press, that I do not intend to intrude upon your time with further remarks, save to add my fervent plea for frequent and thorough vaginal and intrauterine examination of all women between the ages of thirty-five and fifty-five or sixty that have the slightest symptoms of uterine trouble. It is well known to all of you that carcinoma of the uterus is a painless and insidious disease in its early stage. When a patient recognizes symptoms sufficient to cause her to go to a physician and request an examination, it is usually too late for operative interference.

This unfortunate condition is the subject of this paper, and it is to this class of cases of so-called "inoperable carcinoma" that I would invite your attention. The question of just what may be classified as operable and inoperable carcinoma of the uterus will always be in many cases unsettled. The reason: Carcinomata of the uterus are variable in their virulence, and the individual resistance of patients is also variable. The location of the disease, extent and the variety, whether squamous-celled or adenocarcinoma, all play a part in the question of the operability. Adenocarcinoma is most frequently found in the fundus. The tumors of the fundus are slower in growth and less liable to early metastases than those of the cervix.

Adenocarcinomata usually occupy the cervical canal. They are more malignant than the squamous-celled type that usually, though not invariably, occur on the vaginal portion of the cervix. It is said that when adenocarcinoma occurs just at the junction of the cervix and the uterus, it is more resistant here than anywhere else to all forms of treatment. In the beginning of these cases there is present no ocular evidence of the disease on examination. It is usually felt as a small nodule or nodules in the upper part of the cervix. The parametrium is affected early in this class of cases, and radical operation is of little avail.

Cancer of the cervix is frequently classified as evertting or vegetative and invertting or scirrhus; but as the scope of this paper only deals with prognosis and treatment, I shall not go into details in regard to classification, diagnosis, symptoms, etc.

It is said on good authority that seventy-five per cent of carcinomas of the uterus when discovered by the general practitioner and surgeon are in an inoperable condition. This percentage

is too high, in my opinion, at least in my personal experience, unless the author of this statement means that less than twenty-five per cent are permanently cured by operation. This I take to be what he means. I do not believe, though, that seventy-five per cent are too far advanced to justify an attempt to eradicate the disease. Kelly claims that only ten per cent of all cases seen are permanently cured. However, Kelly says less than forty per cent of all of the carcinomatous cases admitted to the Johns Hopkins Hospital were operated on, while a great many others were too far advanced and were refused admittance to the institution. So it would seem that the seventy-five per cent inoperable statistics mentioned above are not far from wrong, according to Kelly's statement of what occurred at Hopkins.

All cases of carcinoma of the uterus that are seen early, when the disease is in its incipency, three or four months after the first symptoms appear, that have not advanced beyond the confines of the uterus, and when the patient is in good physical operative condition, should be subjected at once to a complete hysterectomy after first having applied the cold cautery for twenty minutes. But when the condition is of long standing, has progressed beyond the confines of the uterus and cervix, has invaded the broad ligaments, parametrium, the vaginal wall anteriorly and posteriorly, the rectum and bladder, and when the general condition of the patient is bad, hysterectomy is not only inadvisable, but contraindicated.

The treatment that I would call your attention to for these severe, extreme, and doubtful cases, also those classified as absolutely inoperable by the ordinary methods in vogue, is that of James F. Percy, of Galesburg, Ill., known as "the Percy cautery treatment for inoperable carcinoma of the uterus."

Any one who has read the brilliant papers written by Dr. Percy on this subject, followed his clear and logical reasoning, his experimentations in the use of his instruments, his methods and technic, cannot help but feel that he has added a much-needed factor to our surgical armamentarium in the great fight against cancer of the uterus. He has given us something that is simple, safe, and sane. We need not now turn a deaf ear to the poor, pleading, wretched cancerous women seeking relief from pain, hemor-

rhage, and even social ostracism because of their acrid, foul-smelling discharges. We have in this treatment something that carries practically no primary mortality—a procedure that relieves the pain, the hemorrhage, the discharge, and, with it, the odor.

Further, it prolongs the life in every case, and often produces permanent cures when we do not expect them. The reason of this is because metastases only occur in about fifty per cent (Kelly, Schauta) of carcinomata of the uterus. Schauta (Kelly's Gynecology) found in sixty autopsies, death being due to carcinoma of the uterus in which there had been no operation performed, that in twenty-six of them, or forty-three per cent, there had been no involvement of the abdominal or pelvic lymph nodes. Clark, of New Orleans, claims that in one hundred similar cases unoperated there were forty-six that showed no lymphatic involvement of the abdominal glands.

The results of the Percy treatment in advanced cases are as good as panhysterectomies or a Wertheim, and without their heavy primary mortality. In addition, it has as good results or better than a Reis-Wertheim, and has none of the terrible sequences, the morbidity that so often follows this most capital of operations.

In dissecting out all of the glands along the vessels and ureters in the pelvis and abdomen, you prolong the operation and greatly increase the mortality and morbidity. Mayo and Kelly both call attention to the fact that enlarged glands from cancer of the stomach or uterus are not always malignant, but are more often caused by secondary infection from pyogenic organisms in the affected organs. Especially is this so if the glands are soft and not densely adherent. If this is the case, then the Percy cautery treatment will be as effective in removing them by removing the cause as would be their complete enucleation.

As for invasion of the parametrium, broad ligaments, rectum, and bladder, the cautery treatment is as effective in removing every particle of malignant tissue as can be done in a wide hysterectomy, and is better in that it does not destroy any unnecessary tissue. The danger of injuring the ureters is far less by this method; and even if the malignancy has invaded the rectum or bladder by contiguity from the uterus, the cautery is applied in such manner that all such tissues are destroyed; and the resultant fis-

tula, whether a rectouterine or a vesicouterine, usually heals in three or four weeks by simple treatment. To resect a portion of the posterior wall of the bladder or the anterior wall of the rectum would offer such obstacles and make the operation not only dangerous, but useless.

The chief contraindications to the use of the Percy treatment in carcinoma of the uterus is where the patient is so debilitated that she cannot take a general anæsthetic. This is usually the result of grave kidney involvement, grave cachexia, etc. There are many cases seen for the first time that are practically moribund and should not be admitted to a hospital.

By the Reis-Wertheim operation the operability in carcinoma of the uterus has been doubled, but the primary mortality has been trebled. This is the case even in the hands of experienced surgeons. So I cannot wax enthusiastic over this late advance in the surgical treatment of carcinoma. As Dr. Kelly so tersely puts it in these cases: "The more radical the operation, the more immediate deaths; the less radical, the more recurrences."

THE PERCY OUTFIT.

A good working unit, composed of a rheostat, four electric cauteries, and a water-cooled vaginal speculum, comprise the essentials. Each cautery consists of a handle and points, the latter of various sizes and adjustable. All of the electricity that goes into the cautery goes only into the handle, the point being heated by contiguity of substance. Under no circumstance can the patient receive a shock from the cautery.

The cautery is connected with the rheostat, and this with any 110-volt current. The heat generated by this cautery is enormous; and when it is inserted into the uterus, it would give off so much heat in the vagina, if not protected, that necrosis of its walls would follow. To prevent this, a water-cooled speculum is used. This latter, when properly applied, entirely protects the vagina from injury.

TECHNIC OF OPERATION.

Assuming that the operation is being done because of the question of operability by ordinary methods, the patient is given a general anæsthetic and placed on the table in a slight Trendelenberg position. The operator opens the abdomen in the median line, introduces his hand, and ascertains

the exact condition of the uterus and adnexa. If there is no metastasis, no infection of the broad ligaments, no fixation of the uterus, he may decide at this juncture to do a panhysterectomy. The uterus is first cauterized. The instrument should be very hot to seal it up, kill all cancer cells, and sterilize it. This is fast coming to be a common practice with surgeons, as it is claimed that by this method the risk of transplanting the cancer cells is much lessened. But if the uterus is fixed with widespread involvement and the patient a poor operative risk, the Percy technic is continued as follows: The vagina, if small, is dilated with the fingers to admit the water-cooled speculum in the same manner that the sphincter-ani is dilated in a hemorrhoid operation.

After the introduction of the speculum, and when the water is running freely through it, the cold electrocautery is introduced within the uterus up to the fundus. By dilating the cervix, if necessary, and by the operator's pushing the uterus down on the instrument, and at the same time holding the uterus midway between an anteversion and a retroversion, the introduction of the cold cautery is made easy. The current is turned on and the heat gradually raised, as it is specially desirous in the supposed case in question not to form a charcoal core around the cautery. This would defeat the object of the treatment by insulating the cautery and preventing the radiation of the heat to the outermost confines of the uterus and parametrium. *You do not want to cauterize.* Your object is to coagulate (cook the tissues) as far as the disease extends. Percy has shown by experiments that you can by this method coagulate the tissues two and a half to three inches from the core, thereby destroying the cancer cells.

The temperature is regulated by the rheostat and gauged by the gloved hand inside the abdomen on the uterus and by the sizzling sound made by the cautery in the interior of the uterus. If there is involvement of the bladder or rectum, a thermometer in one or both organs will prevent any injury to their walls.

By experiments with sarcomatous and carcinomatous growths, Percy and others ascertained that a heat of 113 to 114 degrees killed the former and 115 to 116 degrees killed the latter. He further found out that the gloved hand in the abdomen on the uterus could withstand only 115 de-

grees of heat; so, practically, when the uterus gets very uncomfortable to the hand holding it, the temperature is 115 degrees, and all malignant cells between the hand and the core are burned. Percy claims that the connective tissue cells can withstand a greater heat than 125 degrees, and that a scaffold, so to speak, is left after the death of the malignancy in the uterus on which a remnant of this organ is rebuilt.

If malignancy is present on either side of the uterus, the operator directs the assistant to deflect the point of the cautery to the affected side, keeping it pointed in that direction till the nodule reaches a temperature of 115 degrees, or until it becomes soft, showing that it has been acted upon by the heat.

Involvement of the rectum and bladder are treated likewise. Of late in bladder involvements during the course of the treatment I filled the bladder several times with cool boric-acid solution. This will protect the mucosa. If the rectum is the seat of trouble, I keep a continuous stream of cool water flowing in and out of it in an instrument similar to the vaginal water-cooled speculum. In all of these fixed cases the uterus that was hard and immovable before the treatment becomes soft and partially movable afterwards. It usually requires from twenty to thirty minutes to produce the desired effect in the average case.

A point that I think is worthy of mention is to have the assistant pull the uterus down into the vaginal speculum with a volcellum forceps during the entire operation, for by doing this no heat can come in contact with the vagina and produce a fistula in the bladder or rectum—a condition probably worse than the carcinoma.

At the completion of the cauterization the cautery is withdrawn and the abdomen closed in the usual manner.

AFTER TREATMENT.

The vagina is filled with vaseline, and the patient is exdouched several times a day. Later, when the slough comes away, which is greater or less in quantities according to the condition of the uterus before the operation, the vagina is douched three times a day with some antiseptic and deodorant, preferably a weak solution of permanganate of potash. The only complication that may follow this treatment is secondary hemorrhage. This has occurred in two of my

cases, necessitating packing, which readily controlled the condition. I have had no deaths from this or any other complication. Dr. S. M. D. Clark, of New Orleans, who has used the Percy method in fifty cases in the past two years, lost two patients from secondary hemorrhage. Since that time as soon as the abdomen is opened he ligates both internal iliacs and one of the ovarians. He has never had any secondary hemorrhages since, and he claims, further, that it has a great tendency to prevent the recurrence of the cancer.

REPORT OF CASES.

In the past fourteen months I have operated on fourteen cases. Eight of these cases were in desperate condition and too far advanced for a hysterectomy. The parametrium was involved in all of them and the uterus fixed. The history showed them to have been suffering with the disease from four years, the longest duration, to two years, the shortest. One of the four years' and one of the three years' duration were of the body of the uterus, and had to be kept in the sanitarium for a week prior to the operation to get them in condition. One case in the series was of moderate severity, while the five other cases did not show a great amount of weakness or cachexia. These five cases might not have been classed as inoperable, for the uterus was not fixed and the parametrium only slightly involved.

The ages of the patients operated upon ranged from thirty-five to fifty-nine years; the average age was a little over forty-three years. There were microscopical examinations from sections made prior to the operation in five cases, but in the remaining nine cases that were in the last stages of the disease no microscopical examination was made. In a case of three or four years' standing, where the cachexia was so pronounced, the odor so repulsive, the hemorrhage so profuse, the crater in the vault of the vagina so perceptible, and the induration so palpable—in fact, where any one of the signs was sufficient to make a clinical diagnosis—I did not consider it necessary to have microscopical verification. I shall not go into detail in regard to the individual cases, as time does not permit.

There has been no primary mortality in any of these operations. In the past month I have seen or heard of each of these cases. Every one of them is alive. All are doing well, with one

exception. She has, I understand, a return. She came back to me about six months ago with a nodule in the posterior vaginal wall, on which I used the hot cautery, knowing at that time that I was affording her only temporary relief. She had originally an involvement of the posterior vaginal wall and rectum. She is fifty-five years old; was bedridden when I first saw her. All the remainder have gained in weight, have lost the cachexia, are doing their own work, and none show signs of recurrence.

All of my cases are of too short duration to draw any definite conclusion from, save that eight of them could never have stood a hysterectomy and would probably have been dead by now. They are not suffering nor a care to their families or friends; and if they are not permanently cured, the temporary results already obtained, I feel, are worthy of note and most gratifying.

You may ask: "Why was this treatment used in five cases that had no metastases?" Because nearly all were poor operative risks. One, fifty-nine years of age, had a thick, fat abdomen, a weak heart, and a trace of albumen in the urine, and did not want a hysterectomy done. In fact, she said after the scraping showed her case to be one of adenocarcinoma of the body of the uterus that if something other than the removal of the uterus and appendages could not be done she would not be operated upon at all.

You may ask why any one would do an operation for relief of carcinoma of the uterus and possibly leave metastases in the glands of the pelvis, abdomen, and possibly in the liver and stomach. In answer to this I will say that if your patient cannot reasonably stand the operation for complete extirpation of the uterus, tubes, ovaries, surrounding tissues, glands, etc., why should you take such a chance on primary mortality and morbidity, when the Percy treatment offers only the slightest danger of primary mortality, the greatest temporary relief, and probably permanent relief? For the enlarged glands may be from infection rather than malignancy. If successful in this treatment, months afterwards, when her general condition has improved, she may then have a hysterectomy or a Wertheim performed.

Dr. John B. Murphy, in speaking of cancer of the breast with involvement of the axillary glands, claims that ultimately one hundred per

cent of them return, even if the radical operation has been done; and I am inclined to the belief that if only visible cancerous glands in a Wertheim operation are removed, many small, imperceptible ones are left, and that even if your patient survives the operation, more than seventy-five per cent of them will relapse in five years. Taking into consideration the high mortality and morbidity of a Wertheim operation in a widespread involvement of the tissues, unless your patient is an unusually good operative risk, I do not believe this operation is equal to the Percy cauterization treatment.

In conclusion, I do not wish to be construed as overenthusiastic in this old treatment of John Byrne that has been perfected and made new. I appreciate its limitations. Still, I believe that Dr. Percy has given us a new and good weapon to fight this dreadful and rapidly increasing disease.

DISCUSSION ON THE PAPER OF DR. NEWELL.

DR. W. T. BLACK, Memphis: I believe that the Percy treatment for inoperable carcinoma is probably the best we have to-day for such a condition. It is based upon the method of Byrne, of Brooklyn, N. Y., with the addition of lowering the heat. It has been proven experimentally that it is absolutely necessary to have low heat instead of high heat, as a red-hot iron produces charring, which interferes with drainage and penetration of the heat. It is necessary to have the requisite paraphernalia to do this work properly.

Of the first three or four cases I operated upon in this manner without the water-cooled speculum, in one there was atresia of the vagina—so much so that I was unable to introduce the finger afterwards. It is absolutely necessary to have a water-cooled speculum. Dr. Percy does not always use the electric outfit, but uses soldering irons to a great extent.

I wish to report two or three cases which have been of unusual interest to me. Two of these patients were bedridden for about five months; they had constant bleeding; were very much emaciated. They were treated by this method, and both never had a return of hemorrhage from the uterus up to the time of death. Both lived about one year, one dying of suppression of urine and the other one dying of hæmaturia from the bladder or kidney. But they never bled during the whole year from the uterus. They were much benefited, and the method is certainly a good one in prolonging life.

There is one case I wish especially to report. The patient, a woman forty-two years of age, was operated on last August. Her cervix was caten away by carcinoma, extending to the posterior vaginal wall. The uterus was movable, however; and in two weeks

after the application of the Percy method the uterus was removed with as many lymphatics as possible. The point I wish to bring out in this particular case is that numerous sections were made after the hysterectomy, after the application of heat, and the cancer cell was not found. Clark, of New Orleans, and Percy have reported similar cases after the use of the Percy treatment in which they have been unable in a certain number of cases to find cancer cells. In a few limited cases these patients may be permanently cured.

DR. L. W. HASKELL, Memphis: The paper this morning has been of unusual interest to me. I think it is a pity that it did not come earlier on the program, when there was a larger attendance, because it is unquestionably something for the medical profession to try out and determine its ultimate usefulness.

We know that we can accept Percy's statements and the statements of others who have reported cases on the treatment of these cases of inoperable cancer and the benefit to be derived from it. The question is, whether we should not treat the early cases by the same method without attempting the operation at the time and possibly not later. I have one such case of a woman who was a difficult operative risk. She was short, fat, had a deep pelvis, a small uterus, and early carcinoma of the cervix, as proven microscopically, in which I used the Percy treatment, because a Wertheim would have been a most difficult operation in that particular case, and would have given a poor operative chance, such as it does in nearly all cases; and it is questionable in my mind whether the Wertheim operation will ever cure any cases of carcinoma of the cervix. There are a number of cases that have been reported as having been cured for several years, but whether this operation will ultimately cure these cases is a question. It has been now two years since this woman was treated. She would not come back for a vaginal hysterectomy, which I advised. At the end of two years there is no discharge of any kind. Her health is much better than it was before she was operated on, and she will not come back for any further treatment. It is going to be interesting to watch the outcome in this case. The responsibility is partly on my shoulders and partly on hers. I feel that I did better by using the Percy method in this case than if I had attempted to do a Wertheim operation.

CARDIONEUROSES.*

BY S. T. RUCKER, M.D.,
Memphis, Tenn.

There is an intimate relation between the great cardiac plexus and the central nervous system. What affects one will react on the other. Psychic excitation will accelerate the pulse, while depressing influences slow the pulse rate. In dis-

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cases of the heart the psychic centers have a tendency to become hypersensitive, and may produce various nervous and mental phenomena.

In his book on "Diseases of the Heart," MacKensie says "the cardiopath tends to become a neuropath." In my work I have often found the neuropath to be a cardiopath. In other words, a relatively large number of patients referred to me suffering from some obscure nervous disorder have a cardiac lesion as an underlying cause. In most of these patients the exact nature of the heart affection could be made out. This was especially true in valvular defects. In some instances, however, supposed to be myocardial, no demonstrable lesion could be found.

In three of my patients the physical condition appeared to be good, and the only indications that they were not well were some atypical mental symptoms. As far as I could see, each one of the patients was making satisfactory progress, and the outlook for recovery was good. They all died suddenly in attacks of cardiac syncope. Three other patients had similar attacks of syncope while under treatment, but soon recovered from the spells and later returned home apparently well. One of these patients died suddenly in three weeks after returning home; another one lived about one year; and the third one I did not hear from.

"In diseases of the myocardium symptoms are uncertain, and an accurate diagnosis is difficult to make. A person with advanced fibroid myocarditis may drop dead suddenly without ever having complained of cardiac distress, and fatty degeneration may exist in an extreme degree without producing symptoms, so long as great dilatation of the chambers does not occur." (Osler.)

I find in my experience that valvular defects are usually attended by symptoms like neurasthenia and anxiety neurosis, while both nervous and mental phenomena are observed in diseases of the myocardium.

A patient from Arkansas—male; age, 26; 5 feet 10 inches high; weight, 160 pounds; unmarried; occupation, planter and trader. His father was living in good health; mother, age 66, had a congenital heart trouble, also had nervous spells that were called "hysteria." Patient said he had enjoyed good health until about two years before I saw him. Said he noticed a shortness of breath on climbing a hill or after running a

short distance. He also had nervous spells, which increased in intensity until he applied to his family physician for relief. He was referred to me for the nervous disorder, and was unaware of any heart trouble. On examination, I found his physical condition good, except for a blowing systolic murmur at the apex. He complained of feeling weak, and had lost interest in everything except his own illness. He had imperative ideas and was anxious about his condition. Insomnia was persistent and appetite poor. My diagnosis was mitral incompetency, with symptoms of neurasthenia. This patient was treated by baths and cardiac tonics, and his dietetic and hygienic habits regulated. He apparently made a good recovery.

Another patient was the wife of a physician from Mississippi. She was 39 years old, weighed 124 pounds, and was 5 feet 4 inches high. Her father died at the age of sixty-seven years of nervous exhaustion; mother still living in good health. This patient had been considered a delicate child. Her health as an adult had been good. She had four children living and had had one abortion. No menstrual disorder. Eighteen months previous to my seeing her she was taken sick with something like la grippe, and had felt more or less ill since. Physical examination showed systolic blood pressure of 100 m.m., irregular heart rhythm, and a faint systolic murmur. Otherwise her physical condition was good. She said she suffered frequently from palpitation of the heart and had sinking spells. The nervous symptoms were neurasthenic in character, and she was worried about her condition. I wrote her husband that she appeared to have a cardiac lesion, probably mitral, complicating the nervous trouble. He immediately brought his eleven-year-old daughter to me for examination, saying that she was unable to run and play like other children without becoming short of breath and cyanotic. I found the child full in size and well nourished. There was clubbing of the fingers and a systolic murmur that was loud and tumultuous. This congenital heart affection, so marked in the child, strengthened my belief that the mother was not free from cardiac pathology.

Another patient I desire to mention was a woman sent to me from Mississippi. She was thirty-five years old, married, and had no children. Her father was living at seventy years in

good health; mother died of pneumonia. The patient was a healthy child and enjoyed good health as an adult until she was about twenty-five years old. At that time she had a heat stroke, and was three months getting over it. Five years later she had another heat stroke, and was sick two months. Two years later she had a severe nervous attack that lasted four months. A recurrent attack of the nervous trouble brought her to me for treatment. I found her physical condition fairly good. Pulse, 96; temperature, 97.5; and a systolic blood pressure of 125 m.m. Her nervous symptoms were atypical, and I was unable to accurately classify them. However, she steadily improved on treatment, and returned home apparently strong and well. About two years later she became nervous, and returned for a course of baths. She again went home in good condition. In June, a year later, she complained to her husband of not feeling well, and he was preparing to send her North to spend the summer. She asked to come to my place to take the baths, thinking they might put her in better condition for the trip North. She looked well and appeared to be in better physical condition than I had before seen her. Her nervous condition was not so good. She was restless at times and could not sleep well. She appeared to be dazed and confused; yet her orientation was good. A week after entering for treatment her nurse said she was restless and slept but little during the night, but felt better during the early morning. At 5:30 A.M. she was sitting up in bed and the nurse was combing her hair, when suddenly she fell back in the arms of the nurse and expired.

I could multiply similar patients who have come under my observation, but these will serve to illustrate the close relationship existing between cardiac disease and nervous disorders.

I regard it of extreme importance in making examinations of nervous patients to use every means at our command to differentiate between functional nervous disorders and those complicating organic disease. This will enable us to tell with some degree of certainty the probable outcome of the patient's illness and guide us in instituting remedial measures appropriate to treat different maladies.

To discuss at length the treatment of cardioneuroses would be to unnecessarily consume valuable time, for you are already familiar with agencies used especially in treating diseases of

the heart. Severe nervous spells of the cardiopath have a tendency to come on at intervals, but will usually disappear under treatment. After recovery, if the patient will observe an appropriate regimen, he may live for years without again becoming nervous.

For the cardiopath, digitalis is, of course, the sovereign remedy, especially where there is cardiac dilatation. The Nauheim or carbon dioxid bath is of undoubted value, and should be used when accessible. The electric-light bath, I believe, would be used more if physicians were familiar with its action on the skin and circulation.

DISCUSSION ON THE PAPER OF DR. RUCKER.

DR. W. H. WITT, Nashville: I would like to make a few remarks with reference to this paper and the subject. In the first place, I must confess that the subject as presented by Dr. Rucker is somewhat revolutionary in the views I have had with reference to the two diseases—that is, so-called “neurasthenic states” and “ordinary cardiac conditions.” I think we are accustomed to feel about this way with reference to cardiac disease and mental state: that it is a common thing in acute infections of the endocardium to have mental confusion or some type of mental aberration. It is probably not far from the condition that develops into chorea, and the explanation is possibly that there is a low-grade infection of the brain producing such mental symptoms, and chorea is another manifestation of the same condition. In addition to that, we are accustomed to find a wide range of mental disturbances in people of broken compensation; and by “broken compensation” I do not mean they have dropsical states, but people that have myocardial conditions, associated with a certain amount of shortness of breath, very frequently have all sorts of mental disturbances. A prominent one among people of that type is a sense of being away from home, but they have shades of every kind of mental disturbance. Under such circumstances we feel the blood supply to the brain is disturbed, possibly by an anæmic state or by vascular changes which take place in connection with the disease. We should not feel that the ordinary cardiac case that is fully compensated is a cause of neurasthenic states. I am inclined to believe that when you consider how many neurasthenic people we have of all kinds with nervous complaints and what a wide range of cardiopathies we have in the practice of medicine, the doctor is hardly justified in saying that the cardiac lesion is responsible for the mental disturbance. I believe the more we study the purely cardiac features and purely mental features and parallel cases without mental and neurasthenic causes that have no cardiac disease, we will get away from the view that the two diseases are necessarily associated.

DR. G. D. LAQUIRE: I rather enjoyed Dr. Rucker's paper, because I can see the pathology of the nervous trouble. I do not believe that heart trouble will bring on neuroses until the compensation is broken to some extent or the brain begins to suffer on account of lack of nutrition and the lack of good circulation. When that takes place, then we have the neuroses. I believe that we have a great many neuroses from weakness of the circulation, weak hearts; and many times we cannot discover the heart lesion from the fact that it is a myocarditis and does not give us very good or clear clinical symptoms. We have a slight oedematous condition of the brain, and this oedematous condition, faulty nutrition, whatever you call it, will bring on a nervous condition, and this nervous condition is one that we lay so much stress upon and overlook the heart trouble.

PROGRESS IN THE TREATMENT OF THE CRIPPLED AND DEFORMED.*

BY R. W. BILLINGTON, M.D.,

Lecturer on Orthopedic Surgery in Vanderbilt Medical School
and Chief of Orthopedic Clinic at Vanderbilt Hospital.

The difficulty of stimulating interest on the part of the public with regard to medical questions is well recognized; and to present a medical topic in such a manner as to be entertaining at the same time to both medical men and laymen is, I fear, a feat well-nigh impossible. However, as my remarks will be brief, I shall ask you to do me the favor of lending for these few minutes an open mind and sympathetic ear to some facts regarding probably the most neglected and at the same time the most deserving class of unfortunates with which we come in contact. In this instance I feel that the subject under consideration peculiarly deserves the mutual interest and coöperation of the public and the medical profession.

You are all familiar with the cripple. He is found in nearly every community. His infirmity may have resulted from some accident or illness, in which instance he and his parents are the recipients of many expressions of sympathy; or the child may have been born with the deformity, which is looked upon by both parents and neighbors as a sort of disgrace to the family. In either instance too frequently little or nothing of practical value is done for him, and he grows up under a physical handicap, which unfits him more or less for a useful and happy existence. He has to fight his way alongside of normal,

healthy fellows, with no allowance or provision at school or elsewhere for his deficiency, which is sometimes mental as well as physical. Special teaching and industrial training suited to the individual case are within the reach of comparatively few. He is made the object of both pity and ridicule, and in many ways he is subjected to embarrassment, which seriously affects his disposition and temperament. Consequently, his mental development and his attitude toward life in general are as much distorted as his body. In the face of our present-day demand for efficiency he is unable to keep the pace, and only too often he becomes a mendicant or an inmate of an almshouse or asylum or possibly a prison. In any case he is a charge upon his family or the community—a public liability. A recent census showed that in the state of Oklahoma alone there were over seven hundred adult cripples who were beggars and paupers. Another census compiled by Dr. Hoke, of Atlanta, found that there were over two thousand cripples in the state of Georgia who were in need of care and treatment; and I have no doubt there are more than that in Tennessee, where so little has been done in the past to alleviate their condition.

The crippled and deformed child needs special provision for his mental and economic development as well as medical and surgical care of his physical defect. In the former as well as the latter problems the orthopedic surgeons of the country have been intensely interested and active in recent years. Therefore, progress in institutional care, with special educational and industrial training, has gone hand in hand with advances in the scientific surgical treatment, rapid as it has been. In fact, the one is very essential to the other if the greatest practical benefits are to be realized. These sociologic and economic features cannot be handled by the medical profession alone. Public interest and activity must be enlisted for these patients as a class, and certainly no class should appeal more strongly for sympathetic coöperation than this. It is true that private philanthropy has until recent years been almost solely responsible for the financing of orthopedic institutions which have been such an important factor in the development of orthopedic surgery to its high standard of present-day efficiency. However, it is now becoming more generally realized that the cripple constitutes a public responsibility, and that the

*President's address at the meeting of the Middle Tennessee Medical Association at Lewisburg, May, 1916.

state should make provision for at least the more chronic types of charity cases who demand prolonged periods of treatment and special education and training. Certainly this is no less a problem of public interest than the care of the insane or the blind, for whom the state has made such excellent and proper provision. Moreover, from a purely economic consideration, the cripple offers the greatest reward of any class for the proper treatment of his ailment. His usefulness to himself, his family, and his community can nearly always be considerably enhanced, and oftentimes he may be changed from a state of complete helplessness and dependence to that of independence and great usefulness.

The first state institution of this kind was established in Minnesota in 1897. Since that time several other states have followed this example and are now bearing abundant proof of the wisdom of their new undertaking. It is a notable fact that most of those states which have undertaken this work were already receiving the benefits of the best private hospitals in this line of work. This fact is proof of the worth of orthopedic institutions to the public welfare, but it has not served to extend their influence into very much new territory. The greater part of our country, especially the West and South, have very few orthopedic surgeons and little or no facilities in the way of either public or private institutions. So while we may say that wonderful progress has been made in orthopedic surgery as practiced at its best, it is, nevertheless, true that the great majority of cripples throughout the country are still receiving none of the benefits that have been made possible by that development. Such an uncultivated field requires competent and tireless workers, and then it must require time for cultivation before the harvest of results to the community can be realized, as has been the case in other of the older branches of surgery. The metaphor might be carried further by adding that in the process of cultivation there must and will be a weeding-out process of the many fallacious ideas and superstitions and of the charlatans and quacks who have profited by the ignorance of these unfortunates. I know of no more pitiable class of victims than those children whose parents have been so deluded as to allow their tuberculous joints and spines to be rubbed and manipulated on the pretense of some fictitious displacement

or nerve pressure as the cause of the symptoms; or their paralyzed limbs to remain useless or grow crooked in a futile and perhaps deceptive attempt to restore muscular power by electricity, massage, or whatever single line of treatment that particular shark happened to champion. Such vultures and the blind faith of their prey must give way before the march of real progress in the knowledge of these conditions.

As to the development of the purely scientific side of orthopedic work, neither time nor occasion permits of any very extended remarks. As a specialty, it is one of the youngest; but in its contributions to human welfare and happiness it stands to-day in the front rank. Its economic and humanitarian achievements have, as already suggested, attracted the attention of numerous philanthropic individuals and societies and of several of our states; and every year a greater number of physicians are realizing its opportunities and its need for more workers and are enlisting in its service.

Its history as an independent specialty dates back to the epoch-making work of Sayre, Taylor, Davis, and Knight in New York a half century ago. Their pioneer work in the diagnosis and proper classification of the crippling affections and of their treatment by physical and mechanical means stands out prominently to-day. In immediate recognition of the labors and influence of these men, two important events naturally resulted which have had a far-reaching influence on the development of orthopedic work. One was the establishment of a chair of orthopedic surgery in Bellevue Hospital Medical College in 1861; the other was the founding of the Hospital for Ruptured and Crippled by Dr. James Knight in 1863. Many other important men and events might be mentioned in the history of subsequent development, but time will not permit. Early developments in treatment were largely limited to physical and mechanical methods, though even then surgical operations were occasionally resorted to. Then came the period of aseptic operative work in all branches of surgery, and the orthopedists were not slow to grasp its possibilities. This new enthusiasm carried the more radical surgeons, particularly those who had had no orthopedic training, to attempt all sorts of operative procedures on the cripples, and naturally much harm was done, particularly in the treatment of tuberculous bone

and joint disease. Orthopedic surgery is essentially conservative in its objects, and the more radical methods did not always meet with the approval of the older men. But out of a period of much argument and many mistakes we have now arrived at a more rational and uniform estimate of the relative values of and indications for the different operative as well as conservative methods.

A most important and ever-present factor in the handling of orthopedic patients, and one in which the public particularly needs education, is the value of preventive measures and early attention to the frequently small beginnings in these cases. Prophylaxis here is no less essential than in other public-health matters. It may have to do with the treatment of diseases—such as rickets, tuberculosis, etc.—which are capable of producing deformities if not promptly and properly managed; or it may be a case of applying some simple measures in the early stages of troubles like flatfoot, spinal curvature, or infantile paralysis, which, if neglected, will later require more prolonged and radical treatment and probably give inferior end results. Again, it may be concerned in preventing some unpleasant complication which is apt to arise in neglected cases, such as an open sinus from a tuberculous joint or paralysis in Pott's disease. While many types of deformity may be more or less completely corrected at any time, it is nearly always more easily and perfectly accomplished if seen early. However, the fact remains that these cases are very frequently neglected for months and even years before applying for relief. As, in my own observation, this is usually due to ignorance, it plainly becomes the duty of the profession to educate the people to the possibilities and indications in such conditions and to the needs for early diagnosis and treatment.

One of the best ways to reach the public in such matters is to appeal to their higher natures and sympathies. Most people want to feel that they are doing some good in the world, particularly if it does not cost them too much. Let us have a public institution which is doing a demonstrable service and which is costing the individuals of the state even a very small portion to maintain, and it will not be long until their present apathy and ignorance on this subject will give way to a healthy and profitable interest. But before this means can be realized, physicians

generally must show more interest in these patients and take time to explain to them more fully than they have done in the past their duty in these matters. As examples of what we may tell these patients about their conditions and what orthopedic surgery may do for them, I will discuss briefly a few of the more common conditions seen by the general practitioner.

The hunchback deformity of Pott's disease is a monument to some one's neglect. Such deformity can be largely, if not altogether, prevented if the case is treated properly from the beginning; but if the hump has already reached considerable proportions, it can be changed very little, and treatment must then be directed only toward assisting nature to heal the tuberculous process. By the help of the Albee spinal-bone graft and the Rollier sunlight treatment and the many other valuable procedures we can cure or alleviate the great majority of such cases and in a much shorter time than was formerly possible. However, the management of any tuberculous bone or joint disease consists of a great deal more than an operation or sunlight therapy or any other single procedure. There are questions of the general health, deformity or malpositions of the parts, shortening, pressure, motion, paralysis, abscess, pain, function, and other things which demand appropriate measures and which cannot be met by any single method. Therefore it is necessary that the patient have his diagnosis made early and begin treatment at once, always with the understanding that persistent and thorough care over a period of many months, and usually years, will be required to effect a cure.

In infantile paralysis orthopedic treatment should be instituted as soon as the paralysis develops in the acute attack. Most of the cases that I see have gone for months and years, developing contractions and deformities and unnecessary disuse atrophy which could have been, partly, if not completely, obviated. We can do our patients a great service by seeing that they do not waste their opportunities and money on the "paths" and "practors" and misapplied braces; for while massage, braces, electricity, etc., may be of value when correctly applied at the proper time, yet they may result in serious harm improperly used. The operative treatment of paralysis has been greatly perfected in recent years. By tendon transplantation, lengthening and fixation, silk ligaments, arthrodesis, astraga-

lectomy, etc., these cases can usually be greatly improved, allowing many of them to discard the use of braces entirely or making their use possible and practicable. Limbs may be made useful after years of disuse, and some who have never walked can be made fairly active and independent.

A congenital clubfoot in a person over a year old is a reproach and a disgrace to the family or their doctor or both. If treated properly in the first few months of life, a perfect foot will be obtained, usually without any operation or other serious inconvenience. If neglected until childhood or adult life, the deformity can be corrected; but it will demand an operation, and the result will not be as perfect as by the earlier and simpler method of gradual correction without operation.

Scoliosis, lateral curvature of the spine, is easily prevented or corrected if treated early; but if allowed to progress, it is difficult or impossible of cure, though it may be greatly improved by long and strenuous treatment, such as by the Abbott jackets. It is strange, but all too frequent, that neither family nor physician observes the presence of this trouble until it has advanced to a marked degree. The physician cannot, of course, recognize a condition unless he has the opportunity of examining the patient. Every community should have medical inspection of its school children, as many are already doing; and spinal curvature, which, including the mild and favorable cases, is of very frequent occurrence, should be looked for along with eye, throat, and other troubles. Many cities have found such a practice most profitable.

Until a little over twenty years ago congenital dislocation of the hip was thought to be incurable. Now we know that nearly all of these cases which formerly produced lifelong cripples can now be completely cured if treatment is instituted before it is too late. The bloodless reduction methods of Lorenz and others have completely changed the outlook for these patients. But here, again, early treatment is all important to success.

Again, the deformities of rickets (which is practically always the cause of bowlegs and knock-knees in young children) can be prevented by proper early attention to this disease. It usually develops at ten to eighteen months of age, as the result of bottle feeding, unhygienic sur-

roundings, and the common custom of allowing the baby to nurse the breast after the age of one year. In its milder forms it is very common even in our best families, and often accounts for permanent awkwardness of carriage and unsightliness of limb and body. While the gross deformities may be corrected at any time by surgical means, it is always unfortunate that such measures should become necessary.

Other conditions might be mentioned, but further discussion along this line is unnecessary. I know of no way to sum up the more essential points which I hoped to impress upon you than to quote the concluding remarks of Dr. Davis' presidential address before the American Orthopedic Association: "We are not solely the medical attendants of these cripples, but also to a certain extent their guardians. We are the ones who better even than parents can decide to what extent training can go hand in hand with treatment. . . . The state is beginning to recognize its duty in this direction, and finds that it is good public policy to provide treatment and instruction for orthopedic patients. The public-school systems are providing our hospitals with teachers who do what they can to prevent the children from falling helplessly behind in their studies. For the out-patient poor the corps of social-service workers here find a useful sphere. . . . By working in harmony with these, . . . our medical work will become more philanthropic and their altruistic work will become more truly useful." Then, "our private patients should not be neglected. These latter can almost always be provided by their parents with suitable teaching and training if only we, their advisors, call attention to the necessity of preventing their crippled children from acquiring this undesirable 'mental warp' and insist that they see that their education and training be not unduly neglected. This is a field that has not been recognized as it should be; but as our surgical treatment becomes more standardized, the sphere of our work becomes wider; and it is our duty now to do what we can, not only to treat cripples surgically, but also to aid in their proper mental and moral development."

"Book Reviews" and "Society Proceedings" are unavoidably crowded out this month, but will appear regularly hereafter.

INTRACTABLE GONORRHŒA.*

BY GEORGE R. LIVERMORE, M.D.,

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So little stress is laid upon the difficulty of curing gonorrhœa in most works on the subject that a great many doctors consider gonorrhœa a very simple disease that a hand injection and santol oil will completely cure in a few weeks. The harm that has been done by authors of textbooks who make light of gonorrhœa is incalculable, and it behooves those of us who know the folly of such teaching to exert every effort to eradicate this idea among the doctors and to educate the public to the seriousness of gonorrhœa.

Some years ago I heard the chairman of the surgical section of one of our medical associations make the statement that gonorrhœa was a self-limited disease which would get well in time, regardless of the treatment. I challenged that statement then and I challenge it to-day, despite the fact that no less an authority than Dr. E. L. Keyes, of New York, bears out that chairman's statement in an article, "Observations Upon the Resistance of Gonococci in the Male Urethra," January, 1912, in which he says he has never known the gonococcus to survive in the male host for more than three years, while he believes that in ninety per cent of cases it disappears, with or without treatment, within a year.

If ninety per cent of our gonorrhœa cases will be cured with or without treatment in a year and the remaining ten per cent in not more than three years, why treat them at all? Why subject these patients to the expense and discomfort of treatment for a disease that will cure itself? After a large experience in the treatment of gonorrhœa, I am convinced that it is one of the most difficult of all diseases to completely cure. The fact that it is an insidious disease—often lying dormant for years without causing appreciable symptoms—is responsible for the contempt in which it is held. Thousands—yea, millions—of men are going about their daily work, harboring gonococci in their prostates, vesicles, or follicles, and yet are in utter ignorance of their presence, and would doubtless consider it an insult if one

suggested that they had gonorrhœa. It is a fact that many cases of gonorrhœa are apparently cured in a few weeks by astringent injections (which accounts for the popularity of the sure-cure patent medicines); but in reality the gonococcus is only temporarily held in check and will make its presence known sooner or later in the form of an exacerbation of the old attack—an acute prostatitis, a stricture, or other manifestations.

The discharge of a recurrent gonorrhœa is very easily controlled, and a point of differential diagnosis between a new infection and an exacerbation of an old gonorrhœa is that all discharge will practically cease in a recurrent gonorrhœa after one irrigation. The reason for this is that the gonococci which have been in the patient's system since the first attack have resulted in the formation of antibodies in the blood, and the one injection, plus these antibodies, is sufficient to immediately clear up the discharge. As soon as the discharge ceases, the patient thinks he is well; and as far as he knows, he is well, for he goes about his daily work free from pain or disagreeable symptoms, even indulging in intercourse and his usual daily glass of beer without lighting up his old infection, which only makes its presence known under some unusual effort or extra dissipation. Again and again do I see patients who give a history of gonorrhœa five, ten, fifteen, twenty, and one forty years ago, who have married and had children and have had no evidence of gonorrhœa in all these years (and who have not exposed themselves to a *new* infection), yet under some unusual exercise, a spree, or an attack of typhoid fever have the old case return with all the virulence of an acute attack. The correctness of the diagnosis has been proven in each case by culture and microscopic methods. Dr. Keyes may say that these patients have lied about exposing themselves to a new infection, and I am willing to grant that some of them may have done so, but not all of them, for many of them are men whose integrity is above reproach. It is immaterial, however, whether they are lying or not in so far as determining whether the infection is recent or a longstanding one is concerned, for they could not develop the symptoms of chronic posteria gonorrhœa in the short time that has elapsed between the first appearance of symptoms and their reporting at my office for treatment. Many doc-

*Read at the meeting of the West Tennessee Medical and Surgical Association at Jackson, May, 1916.

tors will ask: "If these patients have had gonorrhœa for years and years, have married and had children, why is it that their wives have not become infected?" In answer I will say that in the great majority of cases they have, for gynecologists tell us that from seventy-five to ninety per cent of all operations on women are due to uncured gonorrhœa in men. In others perhaps the gonococci have become so attenuated and the man has developed so many antibodies that his wife imbibes enough immunity through sexual intercourse with him to resist infection from these attenuated gonococci.

We know, too, that examinations of the secretions from the vesicles, urethra, and prostates of these patients are negative at one time and positive at another; and, therefore, in like manner not every act of coitus is fraught with danger, as the gonococci may remain in the follicle or gland where they have been for years and will not be dislodged by normal sexual intercourse. This state of affairs may go on for years and the wife escape infection till the husband gets on a spree or indulges in violent exercise, or sexual excess, and then there is an exacerbation of his old gonorrhœa; he has a discharge which contains gonococci; and if the wife has not developed sufficient immunity through sexual intercourse with him prior to the exacerbation, she will in all probability fall a victim to the disease.

The following case is typical of the wife who escapes for a while and then succumbs: A man who was under my care for two months, suffering from acute posterior gonorrhœa and with gonococci still present in cultures, left for Germany, and, while on the steamer, had a return of his discharge. In Germany he was under the care of a noted G.U. specialist, who treated him eight months and discharged him as cured. He returned to Memphis, and, coincident therewith, had a return of all his symptoms of gonorrhœa, and we found gonococci in his discharge. He was under treatment about three months and had had two negative cultures (I require six), when he was called to New York and remained there a year. He took no treatment after leaving me and had no symptoms of the disease. He then married and returned to Memphis, and one year later his wife gave birth to a boy. Five days after delivery she had a temperature of 102 and a greenish, purulent discharge, which contained

large numbers of gonococci. The husband assured me that he had no symptoms of gonorrhœa and was ignorant of his infection, but readily assented to an examination. Cultures from his urine after prostatic and vesicular massage showed gonococci. All of those who have been infected by their husbands do not seek treatment; for most women seem to regard gonorrhœa as a more or less normal discharge, and only when it produces painful symptoms do they consult a physician. Thus only a certain percentage of those infected ever come under the care of a physician until some involvement of the tube or ovary has taken place; and surely if man is able to carry the gonococcus in his prostate and vesicles for years without very appreciable symptoms, woman is no less fortunate, for her uterine and vulvovaginal glands offer hiding places that are even more seductive to the life and propagation of the gonococcus than the prostate and vesicles. I now have under treatment two young women who have been under treatment for leucorrhœa several times during the past year by prominent gynecologists, both of whom have been cured, and neither of whom suspected gonorrhœa, nor did the gynecologists suspect the presence of the infection. In chronic gonorrhœa in women, as well as in men, it is often exceedingly difficult to find the gonococcus, and in many cases only by repeated cultures can it be demonstrated. The mere examination of the discharge under the microscope, regardless of the number of times it is done, is no criterion as to the presence of gonococci; for in many patients repeated cultures, following massage of the prostate and vesicles, together with injection of the urethral follicles with silver nitrate twenty per cent in men, and swabs from the vagina, cervix, urethra, and vulvovaginal glands in women, are negative, and still these patients are infected with gonococci, which can be proven if we persist in our efforts to locate them.

I rely upon the complement fixation test only as another aid in determining when a patient is cured; but I consider repeated cultures, preceded by massage of the prostate and vesicles, the passage of sounds, and the injection of urethral follicles with twenty-per-cent silver, together with a hypodermic of gonococcic vaccine, to be superior to any method at our command for determining the presence or absence of gonococci.

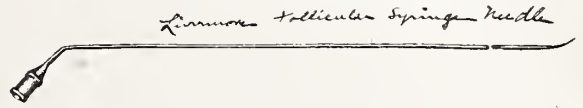
We have found that cultura media of beef testicles, according to the formula of Dr. Hirschfelder, is best for growing gonococci. The intractability of gonorrhœa is due to our failure to kill the gonococcus—not that we do not possess efficient gonococcicides, for we have some very efficient ones, but to our failure to reach the gonococcus. We have no drugs that, when injected into the urethra and bladder, will kill the gonococcus when he is buried in the urethral follicles, Cowper's glands, the utricle, the ejaculatory ducts, seminal vesicles, or prostate gland. The eradication of the gonococcus from these hiding places is a different matter, and only by careful and painstaking treatment, that taxes both the patience and ingenuity of the doctor and the patience and pocketbook of the patient, can it be accomplished.

It has been my experience that the prostate vesicles and urethral follicles are the chief offenders; and it is, therefore, to these structures that our special attention must be directed, not failing, however, to carefully examine every other locality that could harbor a gonococcus. The para-urethral follicles often retain infection for years, and urethral fistulæ that are apparently entirely healed may prove a secure refuge for this wary germ. The infection in the seminal vesicles is often overlooked, and gonococci may remain here for years, causing a train of symptoms quite baffling to the internist. They can be dislodged from this locality only by the most careful and thorough treatment, even, in many cases, having to resort to surgery before the patient is entirely relieved. In some cases the gonococcus seeks seclusion in the utricle, where he is safe from harm, has an abundance of nourishment, and all environments to his liking.

The treatment of intractable gonorrhœa consists, first, in locating the duct, follicle, or gland that harbors the gonococcus, and, second, in not overlooking the fact that in dislodging the gonococcus from one location he may gain a foothold in another.

For para-urethral infection, incision and packing is best, special care being taken to open the follicle throughout its entire length; for if we fail to do this, the infection will not be eradicated. Infection in the utricle and urethral follicles is treated by injection with peroxide and water, equal parts, followed by silver nitrate twenty per cent through the writer's follicular

needle and by fulguration with the high-frequency current. The writer's needle is of gold, about nine inches long, so bent that the hand of the operator does not obstruct the view when the needle is introduced into the follicle through the urethroscope (see cut). I consider fulguration less efficacious than injecting with the follicular needle, and it is objectionable from the fact that fulguration produces a scar which may result in stricture if too many follicles are ful-



gured. Prostatic and vesicular infection is best treated by massage; but hot sitz baths and the high-frequency prostatic electrode, together with the passage of sounds and dilators, should be utilized in aiding to rid the prostate and vesicles of gonococci.

The injection of the vesicles with argyrol, collargol, etc., after Belfield through a vasostomy is also recommended, and in some cases incision and drainage of the vesicles is necessary to effect a cure. A stricture, too, may be the means of prolonging the infection; and this must receive appropriate treatment before it can be eradicated. Practically all strictures are dilatable, and only elastic and very old innodular ones should be cut. We must remember, however, that once a stricture, always a stricture; and after adequate dilatation has been attained, these patients must be warned against the danger that is in store for those who fail to have sounds passed twice a year as long as they live.

A small meatus is also a frequent cause of intractable gonorrhœa. A safe rule is to do a meatomy on every gonorrhœa patient whose meatus will not admit a No. 25 F. sound.

The kidneys should not be overlooked as a possible source of contamination. Ureteral catheterization and culture of the urine from each kidney will clear up this point; and if we find gonococci in one or both kidneys, pelvic lavage through the ureteral catheter, together with autogenous vaccines, will bring about a cure. Dr. Montague Boyd, of Birmingham, Ala., reports two cases in Surgery, Gynecology, and Obstetrics, October, 1915, in which he obtained most satisfactory results by the use of antimeningococic serum.

In regard to serums and vaccines, they are

worthless in the treatment of either acute or chronic gonorrhœa. In their complications, however, such as prostatitis, vesiculitis, epididymitis, arthritis, etc., they seem to help, but in my hands have not given the percentage of happy results that some other observers have reported. I have found the vaccines, however, a valuable aid in determining when a patient is cured.

When do we discharge a case of intractable gonorrhœa as cured? Our rule is to have five negative cultures at weekly intervals, cultures to be obtained after prostatic and vesicular massage, the passage of a sound, and injection of urethral follicles with silver nitrate through the follicular needle and the fifth one after the administration of gonococcic vaccine. The patient is then given a week's rest from treatment, and at the end of this time a sixth culture is made; and if this proves negative, he is told that, to the best of our knowledge and belief, he is well; but he is urged to report in another month for a seventh and a final test, which, if negative, leaves little room for doubt that he is completely cured.

UNITED STATES PUBLIC HEALTH SERVICE.

Congress has recently made an appropriation for thirty-three additional assistant surgeons in the United States Public Health Service. These officers are commissioned by the President and confirmed by the Senate. The tenure of office is permanent, and successful candidates will immediately receive their commissions.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Passed assistant surgeons, after twelve years' service, are entitled to examination for promotion to the grade of surgeon.

Assistant surgeons receive \$2,000; passed assistant surgeons, \$2,400; surgeons, \$3,000; senior surgeons, \$3,500; and assistant surgeon generals, \$4,000 a year. When quarters are not provided, commutation at the rate of \$30, \$40, and \$50 a month, according to grade, is allowed.

All grades receive longevity pay, ten per cent in addition to the regular salary for every five years up to forty per cent after twenty years' service.

Examinations will be held every month or so

in various cities for the convenience of candidates taking the examination. Further information will be furnished by addressing the Surgeon General, United States Public Health Service, Washington, D. C.

NOTES AND COMMENTS

What has become of the old-fashioned doctor who, as preceptor, gave his young pupil a chance to see and do?

Dr. S. T. Parker, Lexington, has returned to his work after a two-months' visit to Northern and Eastern clinics.

What has become of the medical-college professor who gave his assistant a chance and would not "fire" him when he made good?

At the Conference of State Health Officers held at Washington in August the Tennessee State Board of Health was represented by Dr. H. H. Shoulders.

Dr. D. P. Kincaid, Memphis, was married on August 16 to Miss Bessie Loraine Sowers, also of Memphis. Dr. and Mrs. Kincaid are at home at 584 South Cooper Street, Memphis.

Dr. Jere L. Crook, Jackson, had the misfortune of shooting himself through the hand recently. We do not know what Jere was aiming at, but, as usual, he had to hit something.

Dr. B. J. High, Secretary of the Smith County Medical Society, writes the JOURNAL that his society is prospering. Dr. High is a good Secretary, always on time with accurate reports.

We propose to have photographs made of some of the papers submitted to the JOURNAL after ye poor editor has done his best with them. These photos. will then be presented to the so-called "writers" of the papers. One hundred and ninety-eight corrections in one paper "got our goat."

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Independent Life Bldg., Nashville, Tenn****SEPTEMBER, 1916****EDITORIALS****STATE BOARD OF HEALTH
LABORATORY.**

The day has come when a well-manned and well-equipped laboratory is a most valuable arm of a public-health service and a positive necessity for any state department of health which is intended to give really helpful service. A year or two ago the present Secretary of the Tennessee State Board of Health succeeded in securing an appropriation at the hands of the Legislature which enabled the board to establish the beginning of what it is hoped will grow into a hygienic laboratory that will meet the demands that justly can be made upon such an institution in Tennessee. Dr. William Litterer has conducted the work of this department of the State Board of Health in a way that has made it of very great value to the board and to the physicians and people of the state; but the activities of the laboratory have, of necessity, been very limited as compared with the urgent need that exists for laboratory facilities. It is highly important that the next Legislature shall be made to see the importance of providing money enough for laboratory purposes to enable the Board of Health to withdraw the restrictions that are now necessarily thrown about the service that is offered through its laboratory.

It is not at all necessary to point out to the readers of this JOURNAL just what the many advantages are that can be offered to individual physicians, individual citizens, communities, and the whole state by the operations of a well-conducted laboratory. Suffice it to say that such an institution can be of inestimable help to physicians in diagnosis, to individual citizens in making it possible for them to receive the benefits of sound and proper treatment based upon a scientific diagnosis arrived at through positive laboratory methods, and to communities and the

state at large through the detection of infections and contaminations of public water supplies which would escape discovery if no laboratory were available.

We have taken some trouble to secure the figures given below, which show how limited the laboratory service of the State Board of Health of Tennessee is as compared with like institutions under the auspices of other state boards of health in the South.

Where 1,215 specimens were examined by our State Board of Health Laboratory, 7,338 were examined by the laboratory of little South Carolina. Alabama had 7,926 examinations made, as against Tennessee's 1,215. Georgia, through her laboratory, gave nearly eight times as much service as did Tennessee, the number of examinations having been 8,602. Mississippi, with a state health service very recently established, recorded 11,981 examinations. Virginia, a state in which the public-health service has come to be recognized as a powerful means for promoting the general welfare of the state, had 16,772 examinations made in the work incident to health promotion. North Carolina, another of our neighbors, exceeded Virginia's record by more than 100 examinations, having recorded 16,879. Florida, a state which appreciates the absolute necessity for health conservation in a state which has any hope of material advancement in any line and in which the public-health department is supported by direct taxation of all the people, maintains three laboratories, in which 29,177 examinations were made, as against Tennessee's 1,215. What's the answer?

The answer is that Tennessee's Board of Health must have more money to operate more laboratory and to give more service toward reducing the unnecessary high death rate, which is a most hurtful advertisement to Tennessee, the best state of them all. There is no valid reason which can be stated by any man why Tennessee should not progress with the most progressive, and an efficient health service is one of the first essentials for any state which would go forward and stay up in the procession. The "no-money" cry which greets every movement for betterment of living conditions in Tennessee should be choked into silence by sensible legislation that will provide money. Cut off a few hundred thousands from fee-grabbing officials in the ninety-six counties in Tennessee and turn

this money into channels where it will produce benefits for the masses. This is only one suggestion of the many that might be offered looking to the providing of money sufficient to put old Tennessee where she belongs among her sister states—up in front. Long enough has she been advertised to the world as the “only state except Arkansas” which is between any other state and the bottom of the list in the matter of providing for the proper safeguarding of the public health.

-OLS, -ARGINS, -TOLS, AND -TARNINS.

Several weeks ago a Tennessee physician described his treatment for a common disease in the hearing of this writer. For the initial stage he used some kind of -ol, and followed it up with some kind of -argin. If things went along smoothly for a day or two, he supplemented the -argin with a -tol and then increased his medication by stuffing his patient with a -tarnin; if things did not go well, he immediately proceeded to make them go worse by doubling his doses of -ols, decreasing the intervals between the administration of the -argins, hanging steadily to his -tols, and swimming the poor patient in -tarnins. In addition to all this damfoolishness, he wrapped 'em up in -gistines, painted 'em with -gyrols, and steamed 'em with -molines. We didn't stay to hear what he did with his patients after that; but as we drove away from this doctor's town, we noted a large and enthusiastic cemetery adorning a very considerable portion of the landscape which we easily persuaded ourselves to believe was promoted and populated by the giver of the “ready-mades.”

We listened to a discussion—have listened to several of them, in fact—participated in by physicians who devote themselves to the treatment of diseases of the eye, ear, nose, and throat. We heard the names of more different kinds of -ols, -argins, -tols, and -tarnins in that discussion than we thought the multiplied minds of all the men in creation could invent. These remarkable “remedies,” as described by these remarkable specialists, could “penetrate further” than a bullet from a Mauser rifle, could disinfect more thoroughly and quicker than naked fire, resolve and dissolve more completely than concentrated sulfuric acid and aqua regia, singly and combined, and soothe more gently than a mother's heavenly song to her babe in arms.

We had some kind of a “breakin' out” on our hide, and went, as we have been taught we should do, to a skin specialist for treatment. It was nearly necessary to hire a dray to carry away the bundle of prescriptions that was given us; but, numerous as the prescriptions were, there were less than half as many of them as there were -ols, -argins, -tols, and -tarnins written on them. They were to be taken inside, washed on the outside, sprayed and painted, rubbed and smeared on, washed off and worn off.

We have been into the offices of many of these dispensers of ready-made-sure-shot-never-fail-best-ever-money-getters-for-the-men-that-make-them, and have seen the medical literature that adorns their desks and tables. The “Buy-from-us Gazette,” the “We-want-your-trade Archives,” the “In-the-game-for-the-money Therapeutic Notes,” and the “Boost-'em-up Clinic” are the magazines that have been unwrapped in those offices. The names here given of these magazines are fictitious mainly in that they disclose the real purpose which they are intended to serve, for the truth can never be fictitious, and the names we have given are the true names for these periodicals, even though they do not so appear on the title-pages.

A large number of physicians, relatively speaking, testified for Wine of Cardui in the recent lawsuit against the American Medical Association.

What we want to know is: Is the medical profession responsible for a great deal of the self-drugging that is practiced by the people? Does their readiness to prescribe the -ols, -argins, -tols, and -tarnins tend to discourage the use of proprietaries put out by irresponsible manufacturing concerns? Is the patent-medicine boozier encouraged in his indulgence by the attitude of many physicians toward nostra of all sorts? Will the confidence of the people which was formerly enjoyed by doctors ever be restored so long as unscientific, unoriginal, and inexcusable shotgun prescribing of preparations primarily intended by their makers for their own enrichment is continued by so large a number of physicians as now are guilty of such practice?

TRACHOMA HOSPITAL.

Dr. R. Q. Lillard, Secretary of the State Board of Health, is very greatly pleased over the

opening of a hospital for the treatment of trachoma at Tazewell. This institution, under the direction of Surgeon McMullen, of the United States Public Health Service, will undoubtedly render a great service, not alone in the treatment of trachoma, but also as a center from which trustworthy and helpful instruction will be given concerning the prevention of the disease.

Dr. McMullen has done great work among the mountain people of Kentucky, so many of whom have suffered from the evil effects of trachoma. He will not find the disease so widespread in Tennessee, but will find plenty of opportunity to exercise his splendid ability as a practitioner, an educator, and an executive.

The JOURNAL congratulates Dr. Lillard upon his enterprise in securing the good offices of Surgeon McMullen, the people of Tazewell upon their public-spiritedness in furnishing the Trachoma Hospital, and the people of the mountains of Upper East Tennessee upon having this very splendid service brought to them.

We bespeak the cordial and active coöperation of the medical profession for Dr. McMullen in his great work. Eighty-nine of every 100,000 of our population are blind. Trachoma is one of the reasons.

PLEASE PAY YOUR SUBSCRIPTION.

Several who subscribed to the fund which was raised at Knoxville for the purpose of assisting the Roane County Medical Society to defray the expense of the prosecution of a certain notorious quack have not paid the amount of their subscription. The Secretary is ready—and has been for a long time—to publish in the JOURNAL the names of those who subscribed and the amounts given. This information will be published in the JOURNAL within the next two months, and along with the names of those who have paid will be published the names of those who have not paid.

Please pay your subscription!

DR. JOHN BENJAMIN MURPHY.

Dr. John Benjamin Murphy, one of the greatest teachers of surgery and one of the greatest technicians the profession of surgery has ever known, died at Mackinac Island, Mich., on August 11, 1916. Dr. Murphy was born in 1857 in

Wisconsin, and received his degree in medicine from Rush Medical College in 1879, after which he studied in Germany for several years. He was Professor of Surgery in Northwestern University School of Medicine and Professor of Clinical Surgery⁶ in the Chicago Postgraduate Medical School. He was an ex-President of the American Medical Association, and had received the greatest honors which could be bestowed at the hands of other medical and surgical associations, as well as many most distinguished favors from other scientific and social organizations. Dr. Murphy had devised numerous operative procedures, had invented several exceedingly valuable surgical appliances, and was the pioneer investigator in numerous fields of surgery in which his explorations led him to most helpful discovery. As a teacher, he was preëminent, and his operating clinic at Mercy Hospital in Chicago was the center to which great numbers of progressive surgeons from all parts of the world traveled for instruction. The name of "John Benjamin Murphy" is one which will live long in the history of surgery.

MEDICAL CORPS, U. S. NAVY.

The next examination for appointment in the Medical Corps of the navy will be held on or about October 23, 1916, at Washington, D.C.; Boston, Mass.; New York, N. Y.; Philadelphia, Pa.; Norfolk, Va.; Charleston, S. C.; Great Lakes (Chicago), Ill.; Mare Island, Cal.; and Puget Sound, Wash.

Applicants must be citizens of the United States and must submit satisfactory evidence of preliminary education and medical education.

The first stage of the examination is for appointment as assistant surgeon in the Medical Reserve Corps, and embraces the following subjects: (a) Anatomy, (b) physiology, (c) materia medica and therapeutics, (d) general medicine, (e) general surgery, (f) obstetrics.

The successful candidate then attends the course of instruction at the Naval Medical School. During this course he receives a salary of \$2,000 per annum, with allowances for quarters, heat, and light; and at the end of the course, if he successfully passes an examination in the subjects taught in the school, he is commis-

sioned an assistant surgeon in the navy to fill a vacancy.

Full information with regard to the physical and professional examinations, with instructions how to submit formal application, may be obtained by addressing the Surgeon General of the Navy, Navy Department, Washington, D. C.

W. C. BRAISTED,
Surgeon General, U. S. Navy.

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JACKSON COUNTY MEDICAL SOCIETY.

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OVERTON COUNTY MEDICAL SOCIETY.

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ROBERTSON COUNTY MEDICAL SOCIETY.

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A. R. Porter, A. R. Porter, Jr., E. C. Ham, A. P. Bush,
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E. J. Johnson, J. A. Crisler, J. E. French (Oakville),
J. Clifton, E. D. Mitchell, O. P. Walker, C. C. Howard,
Josephine Stephens, J. A. Jelks, Robin Mason, Frank
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ner, J. R. Thomas, Richmond McKinney, O. M. Laten,
L. H. Chapman (Binghamton), P. H. Anderson, W. H.
Lovejoy, D. K. Sauls, H. E. Thomas, J. L. McGehee,
E. C. Mitchell, S. Burchard, George Gartley, J. M.
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kins, S. S. Terrell, A. G. Jacobs, R. H. Miller, R. B.
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ing, F. Thomas Mitchell, W. W. Mitchell, W. O. Baird,
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Alexandria; H. C. Curtis, Hickman; C. H. Donoho,
Carthage; Rhea E. Garrett, Dixon Springs; B. J. High,
Elmwood; R. E. Key, Monoville; C. D. Robbins, Gor-
donsville; James E. Smith, Grant; R. W. King, Gor-
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SOME FEATURES OF HISTORY TAKING.*

BY W. H. WITT, M.D.,
Nashville, Tenn.

At the risk of seeming presumptuous, I have chosen the subject of "History Taking"—presumptuous because taking a history is to be classed with physical examination, testing urine and blood, or other elemental features of diagnosis. But if all will agree that a properly taken history is often very important and that it is often not forthcoming, there appears at once a reasonable excuse for calling attention to the subject.

A history ranges in its bearing in the situation at hand all the way from being of no value to being of the utmost value. If the case happens to be one in which the history is of real importance, it follows that too much care cannot be bestowed upon it. On the other hand, except for fullness of record, the taking of an elaborate history is often a waste of time. It is understood, of course, that the chief value of a history is as an aid to diagnosis; but a history is often also of value in enabling one to make a prognosis as well. I may say, too, that the safest time to get a thorough history is when the patient is first seen. He rather resents your going over the history again, and considers that you have been negligent or forgetful. All will agree that this is not always possible; nor is it possible every time to write down a history. It is true also that a history of special features may often be gone over more than once with profit. If a question is to be answered properly, it is of first

importance that it be understood; and patients only too often fail to understand the meaning of a question. So it is not a bad habit to read the relevant portions of a history to the patient and let him confirm or make corrections.

It is customary to climb the family tree for information, hoping that it may throw some light on diagnosis, and this is very proper; but I think there is some tendency to overestimate the value of such history. Apart from tuberculosis, arterial changes, and a tendency to functional nervous disease, there is not much to be gained from a family history; but in two of these particularly, tuberculosis and nervous stigmata, such a quizzing is all-important. (I shall not dwell on this.)

It is in taking a personal or so-called "previous" history that there arises occasion for skill, but especially patience—skill and patience that will often be rewarded by unearthing valuable facts. And I may say that a detailed history calls for a rather liberal knowledge of medicine, especially the meaning of symptoms. This is equivalent to saying that no third or fourth-year medical student, or even hospital interne, is prepared to follow the various clues that may appear in a clinical history. Such an individual often gets a better history than you or I, because he has been taught to be methodical and go over all the systems for data; but we of years of practice ought to be, and can be, both more thorough and more discriminating in our lines of inquiry. A physician devoting himself largely to diagnosis will often find that he may be misled if he follows a history secured by some one else. In this paper I shall purposely omit the points that apply to the practice of pediatrics and mental diseases, and take up matters that bear on diagnosis in ordinary internal medicine,

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

with no intention, however, to completely cover the field.

In making inquiry into the childhood of an adult patient, it is of no great importance to know what diseases he had, except in so far as we get information as to complete or incomplete recovery. I think many physicians look upon a history of scarlet fever or diphtheria as important; but if I find that a patient had those diseases and made a prompt recovery, it is as if he had not had them. If he had measles or whooping cough, I am particularly interested in his completeness of recovery—not in the mere fact of his having had them. So that when I read in a history that the patient “had the usual diseases of childhood,” I get no help. I wish to know what those illnesses did to him. I want to know what physical endurance he had, whether he had shortness of breath, a chronic cough, or a tendency to diarrhoea. Such questions give me real information as to his physical status in those years, and may have a very definite bearing on the present trouble.

If the case is of a nervous type, I wish to know his habits as a boy—whether he liked to be alone or with the crowd, whether he made friends or did not, whether he took his playground medicine squarely or whether he whined. I am also inclined to attach very little value to menstrual histories of girls. Painful or irregular or even too free menstruation are so common and apparently so little related to the pelvic conditions of adult women that I confess I often overlook careful inquiry along that line.

In taking up specific items, I shall first refer to our old friend, “rheumatism.” In a sense it is superfluous to say that to a doctor the layman’s “rheumatism” is a pain anywhere in the body except his belly or his head. But we are still not as analytical of this word “rheumatism” as we might be. Of course it covers pleurisy, angina pectoris, lightning pains of tabes, prostatic cancer, as well as every variety of arthritis, including spondylitis. If we reduce the patient’s rheumatism to an arthritis, it then becomes necessary to analyze the attack of arthritis. A history of so-called “rheumatic fever” is very important, because it has a bearing on endocarditis. But such an incidence cannot be assumed unless the usual features are more or less accentuated—namely, its relation to sore throat, its tendency to skip from joint to joint, and its tendency to

complete recovery. I am quite aware that other more chronic arthritides have also a relation to sore throat and have some tendency to endocarditis; but the fact remains that the great majority of cases of valvular disease of children and young adults can be traced to an infection associated with tonsillitis, rheumatic fever of the above type, with or without chorea. So that these features should be brought out if they have existed. As to previous endocarditis accompanying rheumatic fever, it can be established better, I think, by subsequent dyspnoea on exertion than by the presence of a murmur at the time of attack; for the murmur is often present without there being a valvular crippling to follow. Such a murmur soon passes away. If we are trying to trace a cardiac involvement to an antecedent rheumatism, I regard it as important that dyspnoea—the best evidence of a crippled heart—shall have followed the rheumatic attack after no great lapse of time—that is, if rheumatic fever occurred in childhood and shortness of breath not for many years after, it is well to discount the apparent relation and be on the lookout for some other cause of the cardiac trouble—say, syphilis or nephritis. A patient of thirty-five, with a clear-cut history of two attacks of rheumatic fever in youth and an infection with syphilis at thirty, showed up with cardiac symptoms. How was he to be classified? And classification in such a case is important. Careful quizzing disclosed that he had never been short of breath till recently—that is, some fifteen years after his attack of rheumatic fever. I regarded his cardiopathy as luetic. If he had had endocardial crippling from his early streptococcus infection, he would long ago have given evidences of trouble. After establishing his history of rheumatic fever, it would be quite easy to say “rheumatic heart,” even with a knowledge of his syphilis, unless his condition in these intermediate years had been carefully inquired into. Along with rheumatic fever, a tonsillar infection should always be inquired into—and not alone for its bearing on endocarditis and arthritis, but also on nephritis. It is quite possible that a good proportion of cases of nephritis are of infectious origin, the throat being the source.

A history of “grippe” is another story that should always be inquired into in detail. The patient’s story that he has had “grippe” should practically be ignored unless “grippe” was prev-

alent at the time. Even then it is well to make detailed inquiry into the nature of the attack. The danger here is, of course, that a recrudescence of tuberculosis may masquerade under the name of "grippe." There is, however, another side to this. I have seen several cases of chronic pulmonary or bronchial disease giving features of pulmonary tuberculosis both from the standpoint of history and physical examination. These patients have told a story of an attack of "grippe," and repeated negative examinations of the sputum and the discovery that their initial attack occurred while influenza was prevalent and they had the usual clinical features of that disease have served to establish the real nature of the trouble. A story of a recent attack of "grippe" puts us at once on our guard for the discovery of some one of the multitudinous complications of that motley infection.

The same kind of scrutiny is due every so-called "attack" of malaria. Sepsis, tuberculosis, and typhoid are well known to be hidden under such a diagnosis, even when made by a physician. A diagnosis of malaria should not be unreservedly accepted unless the plasmodium has been found by a competent observer or the temperature has been of every-other-day incidence or unless it has responded promptly to quinine; and this last criterion is capable of easy abuse. Even with these helpful hints, if cough was present at the time of the so-called "malarial attack," our doubts must still be entertained. Afternoon chills and ill feeling on days when no chill was noticed add further to the suspicion aroused. The confusion of malaria with sepsis is not so often a matter of concern in a history as in a present attack under observation. In the unknown presence of pus, a diagnosis of malaria may be made; but pus has a way of ultimately disclosing its situation and thus clearing the diagnosis—to the satisfaction of the patient if not of the doctor. That typhoid fever is often called "malaria" was fully attested by the febrile attacks in the Spanish-American War. There is still too much disposition among physicians to call a typhoid attack "malaria" if there happen to be recurrent chills, unusual drops in temperature, or an absence of certain phenomena that are supposed to be present in all cases of typhoid. Let us bear in mind two important facts—first, outside of malarious districts malaria is rarely a serious disease; second, typhoid is highly vary-

ing in its clinical course. Of course at present, when Widal reactions are so constantly made, these errors are not so common; but the histories we take often carry us to a former time when such aid was not at command. So that if a patient tells me he had a three-weeks' spell of malarial fever in the past, I do not accept his statement without close inquiry. It is not too much to say that an effort should be made to demolish every history of malaria. To demolish it will in most cases set up a probability of tuberculosis or typhoid—greatly to the help of any matter in hand. The establishment of a great probability of a typhoid in the past is important as bearing on the diagnosis of any fever at present under your analytical study, but it is also of value in establishing the diagnosis of gall-bladder infection. One is distinctly more inclined to accede to a diagnosis of gallstone in an individual giving a history of typhoid than in one with no such history. Now, while we must try to demolish a history of malaria, we must also be willing to let it stand, particularly if it bears the earmarks of a true attack, as described above. In fact, such a history may throw real light on what is now probably some obscure manifestation of that disease. Further, I hold doubts about the plasmodium found by men not especially trained, unless the clinical course of the attack was corroborative; and if the clinical features were highly suggestive, I attach no great importance to a failure to find the organism.

Another trap into which a physician may be readily led unless on his guard is the date of the beginning of an illness. It is very common for a patient to date his illness from some outstanding phenomenon, as a chill, the consciousness of fever, taking to his bed, a pain, a severe headache, a vomiting, and many symptoms that give the patient a sudden jolt and cause him to realize that he is not well. A heart case, for instance, does not come for relief until he has swelling of his feet, an anginal attack, epigastric distress, or other manifestation of long-standing trouble. Proper questioning will reveal that his wind has not been good for some time; that excursions he used to make with ease now take his breath; or if a child, it can be developed that he can't run and play as others do—matters of great importance, but commonly overlooked by the patient or the family until pointed questions are asked.

Cancer patients frequently mislead us as to the

duration of their illness, but so do any others suffering with a slowly developing disease. In deep-seated cancers we can commonly get a history of decline in health antedating any observed local phenomena. A patient was in the hospital for an operation for appendicitis. There was acute onset of symptoms—the mass and the tenderness and some fever; but a line of questioning brought out that for several months he had been losing flesh and strength, especially strength. Operation disclosed cancer of the cecum. So with a cancer of the stomach. Acute symptoms that bring the patient to the doctor should be for a while set aside and careful scrutiny directed to loss of flesh, strength, etc., well before the more urgent symptoms appear. In other words, in any situation where serious pathology is suspected, the physician's duty is to look for symptoms that the patient may easily have overlooked or that to him have no relation whatever to his present symptoms. Only in this way can the beginning of an illness be reasonably calculated. It is remarkable how the beginning of a decline can be gradually set back in the past—month by month or even year by year. Patients are often reluctant to acknowledge anything but very recent illness. In such reluctance I frequently bring the patient around by saying: "How were you a year ago? If not well, in what way were you not well?" etc. At times, of course, we see the reverse. Patients can, and do, give us most enlightening histories, and that with almost no questions asked. Too often, however, the patient's own unedited story is very misleading.

I wish also to call attention to the importance of inquiring particularly as to loss of strength. We often ask a patient if he has lost flesh, but not so often do we ask about loss of strength. They may have hardly noticed it. This has a special bearing on such conditions as cancer, nephritis, and pernicious anæmia, as affording some clue to the earlier stages of the disease. The patient may have continued with his daily duties, but he will agree that the coming of night found him more weary and exhausted than before—better observed often if he has been accustomed to walk to and from his place of business.

A proper discrimination should be made, too, between simple weariness and shortness of breath. At times there will be both, but usually the patient will himself make the distinction.

This distinction must be especially made when a murmur exists. Mere weariness, for the most part, does not incriminate the heart, but grows out of some disease attacking the whole economy. While easily produced, dyspnoea refers rather directly to the heart or the pulmonary areas as the cause of symptoms. Failure to bear this in mind may lead us to a very wrong interpretation of rales in the lung or murmur at the valvular orifices.

The order of the early events in an illness is often of the greatest importance. For instance, a differentiation between pneumonia and appendicitis may be difficult. In pneumonia the chill or its equivalent is apt to precede the pain. In appendicitis the reverse is true. Failure to observe this led me to advise an operation in a case that proved to be pneumonia. The child was sick thirty-six hours before abdominal pain was felt. The surgeon wisely refused to operate, though not the slightest sign could be found in the lung. So it is in extra-uterine pregnancy. The sequence of events in minute detail must be established, no matter how much questioning must be done. Such considerations make it apparent that the man responsible for a diagnosis should secure at least the more relevant portions of a history himself.

These are only a few features of history taking, but they have repeatedly impressed their importance on me.

DISCUSSION ON THE PAPER OF DR. WITT.

DR. WILLIAM D. HAGGARD, Nashville: We know that whatever Dr. Witt has so well digested we can listen to with a great deal of profit and pleasure. I understand that the first part of the paper touched upon the general taking of histories rather than deductions which he drew, and it is to that particular phase of the paper that I wish to direct my remarks.

I think if we will recall statements which we make to our brother practitioners when we call them in consultation to see cases, we will see very readily how inaccurate and inadequate the statements of each other are. One practitioner will say: "I saw that patient last Thursday or a week ago, and I gave her so and so." He will then give a recital of the treatment of the patient, and nothing with reference to the story of the disease and its logical development. How often are we all guilty of that! And is it not true that it is more important for the consultant to get a history from the patient himself? He is liable to be misled unintentionally by the man who has had the patient under observation; and yet how hazy his recollection is as to the

real important feature that has happened since the patient has been under his observation! We get the end results in our minds of what has transpired, rather than the high points in the history as they go along. It makes us feel extremely—I won't say "careless," but—illogical in the development of the history of an illness. So if we let the patient tell his own story in an unvarnished way, we will find it is of value. The patient may take you far afield; but, as a rule, if the patient is not prolix, let him tell his story first and then get a sequential arrangement, so that we can draw some intelligent conclusions. Let us take the histories of our associates in hospitals and note how notoriously incomplete they sometimes are. And so we must agree with the essayist in saying that it is extremely important for the man who is responsible for the diagnosis to get the history himself.

Only yesterday a lad was brought into the hospital who before Christmas was operated on for empyema. It was very important to get a statement from him. He had no fever. The first operation was a thoracotomy, and he had to have a rib resection this time; but when we asked the patient what was the trouble, he said: "It is headache, doctor." His temperature was taken and found to be 102 degrees, with a leucocyte count of 20,000. The chest was negative, there was a Babinski in the leg, and spinal puncture revealed cerebrospinal meningitis. Now if you go on what some one tells you, you are likely to be called "careless" in your diagnosis. The question of history taking, next to physical examination, is the most important thing we need to learn. Of course it is well known that a characteristic of the American physician is not to examine his patients. As Dr. Billings has said, we have a pleasant conversation with our patient, but we do not examine him. A patient may come a hundred miles with a diagnosis of intestinal obstruction, with a perfect story of it; but when you pull down the cover, a strangulated hernia as large as your fist is found, and it has not been observed. We do not look for it. It is hard to be accurate. Careful history taking and physical examination are two of the indispensable requisites in connection with the practice of medicine. This is an extremely important subject and should receive a free discussion.

DR. WILLIAM K. SHEDDAN, Columbia: Dr. Witt's paper is very timely, and one which ought to be read before a great many medical associations. The first thing in taking the history of any case is to study the individual patient—the peculiar characteristics of that individual. As Dr. Haggard has pointed out, one should try to find out whether the individual is hysterical or psychopathic or a neurotic individual. Things of that sort should be taken into consideration, and we should weigh well and carefully the statements of the patient himself. The hysterical individual may magnify all kinds of symptoms to the exclusion of others which are far more important. They pick out, as a rule, some particular type of trouble that they are trying to simulate, and point out everything, in so far as their information goes, to make it meet that particular condition. The first thing, therefore, in taking histories of cases is to

study the individual patient—to individualize him. We cannot group them; we cannot put them in any particular class, and the important point is to individualize all of these cases. The next thing is to get a careful family history. In taking the history of the individual patient, one should also go into the family history. One should try to elicit a history of any neurotic condition in members of the family, because such a neurotic history may be very fundamental. Furthermore, a history of alcoholism plays an important part in making up and reaching an intelligent conclusion, especially in neurotic individuals. Let us take, for instance, the progenitors of epileptics. They may have been hysterical or choreic, or they may have developed other types of nervous perversion; and it is very important in going over this class of cases to get as nearly as possible an accurate family history of these patients. In a great many of these patients showing alcoholic ancestry it has been my observation frequently that we find a trace of a great many of these conditions which go back to the excessive use of alcohol in the ancestry.

Again, I would insist, especially in the neurotic and psychopathic patient, on taking repeated histories, getting a statement from them to-day and a week from to-day, and go over these patients from time to time. Possibly in a great many of these cases you may have to spend a month before you make up your opinion as to the particular condition that exists. It is very essential to get repeated statements from that individual, especially with reference as to whether there is a neurotic or psychopathic cause.

DR. W. H. WITT, Nashville (closing): I have nothing to add, except I would like to refer particularly to what Dr. Sheddan has just said about the story the neurotic will give. In these days, when operative procedures are so safe and so easy, the internist commonly has to pass on the question as to the propriety of operating on a certain individual who consults him. Neurotics can simulate in their symptomatology almost everything in the way of disease. They can give you an acute case of gall-bladder disease; the next one will have an acute case of appendicitis; and a third one will have a most excellent case of small cysts of the ovary, which can always be found; and they will intensify their pains so much in their talk that somebody will operate before the season is over. The duty of the physician in a case like that is to listen with all patience, and, if necessary, talk to that patient again; and a little time and patience will soon reveal to the internist that these things are chiefly in the patient's head. I have frequently done this, which looks like going a long way out of the way, and I have said to such a patient: "The pains you have will never kill you, and take this from me: Do not let anybody operate on you." Neurotics can usually be detected if they are quizzed with patience enough or quizzed a second time. The important features of a family history, as I said in my paper, are three conditions—namely, tuberculosis, nervous stigmata, and, much less important, a tendency to arterial disease.

Sedentary habits shorten life.

ETIOLOGY OF TUBERCULOSIS.*

BY C. A. ROBERTSON, M.D.,
Ridgetop, Tenn.

The ubiquity of tubercle bacilli and their omnipotence in the production of tuberculosis in its various manifestations will not be discussed in this paper, further than to humbly acknowledge their sovereign power as the "captain of the men of death."

Where, when, and how they make their deadly and devastating attacks will be the chief concern in the present discussion. The omnipresence of tubercle bacilli of many species and strains is generally recognized, and offers ample opportunity for the more or less universal infection of mankind, a discussion of which would more properly belong to the etiological epidemiology of the disease.

We have long been taught that there are three chief avenues through which tuberculous infection enters the system of man—

1. By the respiratory tract.
2. By the gastroenteric route.
3. By inoculation, through the broken skin and mucus membranes.

The teaching that tuberculous foci in the system, particularly of the pulmonary forms, are primarily local, is familiar to all; and the literature of the subject is replete with interesting and beautifully worded descriptions of the formation of the initial tubercle, following the lodgment of tubercle bacilli in the tissues of the lungs and other organs of the body. In this connection, however, we will wage no war.

The portal of entry of tubercle bacilli in the infection of man of first and greatest importance has always been ascribed to the respiratory tract, particularly so since the discovery of these organisms by Koch in 1882. By far the greatest number of infections have been supposed to occur through the inhalation of contaminated atmosphere.

Just how tubercle bacilli penetrate the mucosa lining the pulmonary air vesicles has never been explained, nor is it understood, so far as I know. The most logical explanation of which I am capable is that these bacilli, gaining a lodgment in the terminal air sacks of the lung, remain in the vesi-

cles until their presence through irritation or death of some take place, when their toxins are liberated, which in turn produce a catarrhal inflammation of the vesicular mucosa, thus destroying and denuding the mucus surface of its epithelium, permitting a transmigration of the remaining live bacilli into the parenchyma of the lung, where they are taken up by the circulating fluids of the body and thrown into the general circulation.

If this theory is correct, then infection by the respiratory tract is, after all, essentially an infection by inoculation. It is well known that tubercle bacilli have no inherent penetrative or motile power, and that their toxins are not liberated until after their death and disintegration of the waxy capsule. The experiments of Arnold, quoted by Ravenel, showing that the inhalation of certain inert substances, such as lamp black, would result in a deposition of this substance in the parenchyma of the lung, is not conclusive evidence of the penetrative power of tubercle bacilli.

It has been abundantly proven by microscopic investigation that the dust of streets, sidewalks, street cars, and well-ventilated public buildings, admitting a free supply of sunshine or sunlight, is rarely contaminated with living tubercle bacilli; at least, such atmospheric conditions are by no means as potent in the etiology of tuberculosis as we were once wont to believe.

It is, therefore, my conception and belief that infections by the lower respiratory tract play a very minor part in the causation of pulmonary or other forms of tuberculosis. Taking the respiratory tract as a whole and considering the buccal cavity as a part thereof and accepting infections through this tract as inoculative processes, the importance of this route becomes somewhat enhanced.

For reasons already stated, I would combine the first avenue of infection, the respiratory tract, with that of the third portal, inoculation, and place these two routes of infection under the one head of inoculation through the broken skin or mucous membranes and assign it a place secondary in importance to the gastroenteric route.

Infections by means of ingesta may undoubtedly occur through the process of inoculation during mastication and swallowing, the infectious materials being taken up by the lymphatics of the mouth, tonsils, and throat, being conveyed thence to the right side of the heart and blood

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

stream, subsequently producing localizations of tuberculous disease in different parts of the body. Such inoculations, however, are never transmitted directly from the mouth and throat, through the lymphatic system alone, to the lungs, as is sometimes supposed. Upon anatomical and physiological grounds such extension by contiguity of tissue would appear impossible.

That the gastroenteric route as the portal of entry of tubercle bacilli into the system of man is the most frequent and of highest importance cannot be gainsaid.

Believing, as I do, that tuberculous disease is always the result of a general infection of the circulating fluids of the body, and consequently the body cells, the lacteal secretion of a tuberculous mother is infectious to the nursing babe. This means of communicating the disease must be considered of highest importance.

Second only to this source of infection may be considered the use of milk from tuberculous cows during the most active lymphoid period of infancy and childhood—the period of life when the vast majority of infections occur, although no age between the cradle and the grave is exempt. Food and drink subsequent to weaning have opportunities for contamination through flies. Unsanitary conditions of the tuberculous home, uncleanliness of those handling food products, all of which is closely allied with ignorance and poverty, are too numerous and too obvious to call for special mention here.

Tubercle bacilli entering the system through the gastroenteric route are well able to resist the destructive action of the gastric and duodenal contents, their proteid substance being protected by the waxy capsule. They become thoroughly admixed with the food and enter the lymphatic system with the chyle from the small intestines, thence through the chyle-poietic system to the right side of the heart and the general circulation.

The possibility of infections through the broken skin has been demonstrated too often to admit of doubt. In this instance the infectious material is more often than otherwise conveyed to the general circulation through the lymphatic system, but it is not at all improbable that direct infection of the blood stream may occur.

Inoculations through the broken skin, with absorption of lymphatics, may occur with or without the production of adenitis in the glands through which this tuberculous material may

pass. Schroeder and Cotton inoculated a calf under the skin at the end of the tail and produced fatal pulmonary tuberculosis. The bronchial, mediastinal, and mesenteric glands were oedematous and contained tubercle bacilli, but no histologic changes due to tuberculous disease were found.

From a serious consideration of the foregoing I am forced to the conclusion that tuberculous infection is primarily and always a general systemic infection of the circulating fluids of the body, and probably almost always primarily of the lymphatic system and secondarily of the blood stream.

In my conception of the etiology of tuberculosis I recognize a difference in tuberculous *infection* and tuberculous *disease*. *Infection* may exist more or less indefinitely without the development of tuberculous *disease* and until the immunizing forces of nature may have given complete immunity against the development of tuberculosis in its various forms. On the other hand, if the antigenetic substances of the blood are not produced through the stimulating effects of the bacillary toxins, these bacilli continue to live and, under favorable conditions, multiply, and finally gain a lodgment in some suitable tissue soil whose local resistance and vitality has been lowered by some character of traumatism or previous disease. Then it is we have the formation of *tubercles*, with proliferation of cells and their limiting membranes, and *tuberculous disease* is established. The subsequent caseation and degeneration, with multiple abscess formation, rupture, and continual reinfection through the circulating fluids of the body, with ultimate mixed infection, gives us the clinical picture of tuberculosis as a *disease*.

It has been stated that toxins are only liberated from dead tubercle bacilli, and it is a generally accepted fact that antigens and antibodies are only produced by the stimulation of the bacillary toxins upon the body cells.

"How, then," you ask, "can the immunizing processes of the blood be stimulated during the period of infection of the circulating fluids of the body alone and before actual tuberculous lesions or localizations have become established?"

It is to be presumed that not all of the living bacilli escape during their passage through lymphatic glands, and that many of them are killed and are thrown out into the general circulation

in a state of more or less disintegration, to be finally disposed of by opsonins, phagocytosis, bacteriolysis, and the protective forces of the system generally—these, too, in sufficient numbers for more or less antigen production.

In a given case of tuberculous infection of the circulating fluids of the body, the development of tuberculous disease and the localizations of the same depend upon two factors alone:

1. The lack of ability on the part of the blood stream and body cells to develop adequate anti-body protection and immunization.

2. The organs or tissues of the body rendered susceptible by a sort of specialized lowered resistance due to injury, previous disease, local circulatory disturbances either of an active or passive character, or an ischæmia of local vasomotor origin.

In other words, whether a systemic infection by tubercle bacilli in the absence of antibody protection and adequate protective forces will result in pulmonary, bone, meningeal, visceral, joint, or other forms of tuberculosis, depends upon the local inviting conditions producing a soil which may be a favorable battle ground on which to make the attack by the invading pathogenic forces.

From the fact that the lungs have a direct and open communication with the outside world, and through the respiratory function, vitiated and perhaps contaminated, any foreign-body-laden atmosphere is a constant source of traumatism, producing in great part the specialized lowered resistance and impaired vitality of pulmonary tissue, we explain the greater frequency of the pulmonary localizations of tuberculous disease over that of the other forms of the disease. Upon what other theory can we explain the development of hip-joint disease, tuberculous osteomyelitis, Pott's disease, tuberculous meningitis, tuberculosis of the kidney and other viscera, tuberculosis of the testicle and lymphatic glands? If this theory should be accepted as tenable in the localizations just mentioned, it must be accepted in the causation of the pulmonary and laryngeal forms as well.

This conception of the etiology of tuberculosis is, in our opinion, very far-reaching in its importance, since, if generally accepted as correct, it would revolutionize the question of early diagnosis. We would no longer consider the diagnosis of an early pulmonary lesion as evidenced by

lowered percussion note, increased tactile and vocal fremitus, tubular breathing, with perhaps a few fine crackles on forced inspiration limited to a small area of one apex, with a suggestive personal and family history, with or without positive sputum, as an early diagnosis. In fact, we would soon come to consider such a diagnosis as very late. We would place more reliance upon personal anamnesis and specific tuberculin tests in the recognition of infection with insufficient antigen production, and address our treatment to the processes of immunity, thus curing the infection and preventing tuberculous localizations, or what we now call "tuberculosis."

I have no doubt that the day will come when it will be just as ridiculous to speak of tuberculosis of the lungs, tuberculosis of bones, joints, spinal column, or other localizations of that disease, as it is now to speak of smallpox of the skin, syphilis of the bones, or pellagra of the nervous system.

CONCLUSIONS.

1. Tuberculosis is primarily and always an infectious disease of the circulating fluids of the body and body cells.

2. Tuberculous infection occurs with greater frequency by far in early childhood, probably as late as the fifteenth year; hence it is of greatest importance, as a preventive measure, to safeguard the interest of the infant and child.

3. No age is exempt from tuberculous infection and subsequent tuberculous disease.

4. There are in reality only two methods of infection or portals of entry for tubercle bacilli into the system of man:

- (a) The gastroenteric route.

- (b) Inoculation through the broken skin or mucous membranes, which includes infections through the respiratory tract.

5. All infections with tubercle bacilli are either lymphatic or hematic in character.

6. The various forms of tuberculosis are but localizations, the result of a general systemic infection.

7. A systematized effort should be made for an earlier diagnosis of this systemic infection; and for this purpose we should for the time being forget that the supposedly tuberculous patient has a pair of lungs or any other viscus in which the absence of symptoms would negative the pres-

ence of tuberculous infection, with low vital resistance or perhaps actual disease localization.

8. The foregoing represents my present conception of the etiology of tuberculosis, and is by no means conclusive.

DISCUSSION ON THE PAPER OF DR. ROBERTSON.

DR. L. W. HASKELL, Memphis: I think this is too interesting a subject to allow to go by without any remarks on the interesting paper that has been presented to us. Dr. Robertson's conclusions are certainly very suggestive, as his whole idea is one we will all profit by.

The question of tuberculosis is one of interest to every man, regardless of what branch of medicine he is taking up; and some of his results are based on definite scientific work. In this connection I recall the work of Ravenal, who made some experiments on feeding large quantities of tubercle bacilli and fat to dogs, in which the tubercle bacilli passed through the intestinal mucosa direct to the lungs, and in his dogs practically only the lungs became diseased. In those cases there was a tremendous initial dose of the tubercle bacilli. In the work of Dr. Robertson, as I conceive it, we get a few tubercle bacilli at the initial dose, and they continue to multiply, to circulate in the blood, and eventually lodge at some point to lower the resistance. Most frequently the lung is involved, the explanation being that the lung cells are traumatized, which may be correct; or, like other organisms we know of, they have points of special predilection for the lymphoid cells in the intestines. But the point of trying to make an early diagnosis and conceiving the patient is suffering from the incubation period is certainly a very novel one, and one to make us stop and think and possibly pay more attention to the various tuberculin tests which are of greater or less value and may be a great help. Possibly we may give the tuberculin test in a little more accurate manner, particularly as regards the dosage, with an effort to determine how much infection a man has, because we all know in a large percentage of children or young men they will give a positive tuberculin test. If we carry that out with the utmost care, as has been brought forward by men who are doing this work in the great clinics in tuberculosis, I think we will accomplish more than we have in the past.

DR. RICHMOND: There is one point that a great many of us neglect in the study of tuberculosis. Dr. Robertson brought out the point of abscess formation and cavity formation at a later period. We all know that the tubercle bacillus, *per se*, never produces abscess or cavity formation. That is always associated with secondary infection. Our microscopists point out to us that in the secondary infection we have principally the streptococcus to deal with, or different strains associated with pus-producing organisms, such as staphylococci. Following along this line in certain cases for a period of four years in combating secondary infection only by the use of autogenous vaccines, all symptoms of

clinical tuberculosis have disappeared in the treatment of these secondary infections. Therefore I am led to the conclusion that in the treatment of tuberculosis we do not pay sufficient attention to the secondary infection which is always present, and that in the treatment, in addition to the treatment with tuberculin, if we use the autogenous vaccines at the same time, we will get better results.

I have only had the opportunity of studying ten cases during a period of four years, and over half of them at the present time show no indications clinically of tuberculosis, although they were not treated with anything except autogenous vaccines for the secondary infections.

DR. C. A. ROBERTSON, Ridgeway (closing): In the first place, I wish to thank the gentlemen who have discussed my paper. One of my chief concerns in connection with the subject of tuberculosis is a fight for early diagnosis. Only too often the diagnosis is made very late, and the patient has lost his only opportunity to get well. Now, I think that is due to one of several reasons. I am sorry to say the most prevalent reason is because physicians do not examine their patients. They do not interest themselves in a careful history taking; and when they are considering a patient from the viewpoint of tuberculosis, they look at a few of the specialized organs, and only too frequently they look on that patient as possessing one organ—namely, the lung. When they go over the patient's lungs, listening indifferently and carelessly to the respiratory sound, they are too prone to say, "There is no evidence of disease, therefore you have not tuberculosis," and content themselves to wait until they find the sputum positive. That is a very serious mistake.

I think the discovery of the tubercle bacillus was an epoch-making piece of history; but it carries with it some harmful results, and among them the danger of waiting to make the diagnosis until you find tubercle bacilli in the sputum. I have tried to point out that when tubercle bacilli are first found in the sputum, that case has often advanced beyond the curative period. I am convinced of one fact—that there is a time in the clinical history of every tuberculous patient when he can be cured to stay cured; and the effort of my life is to try to find that period and recognize it in time to institute proper treatment. This paper calls attention to no other thought than the idea of making a diagnosis of your patient as an entity in himself, trying to determine whether or not we are dealing with a tuberculous individual. It does not matter where the localization is, if he is a tuberculous individual and has tuberculous disease, we are going to detect it if we are painstaking, methodical, and systematic in our investigation of the man. Let localization come later; and if we find it in the lung, the kidney, the bones, or elsewhere, all right; but let us get at the case early and institute proper immunizing treatment early, and then it will be a common experience for us to have patients suffering from tuberculosis in its various forms cured, recovered, to stay well, without subsequent development of the disease.

Just a word in connection with the question of secondary infection. I want to say that autogenous vac-

cines in tuberculosis are a failure. I do not think they are worth much, and I am gratified to be supported in that view by many of the leading men in phthisiotherapy. At Saranac Lake they never give autogenous vaccines. At many of the institutions for the treatment of the various forms of tuberculous infection with so-called "mixed infection" they place no reliance on autogenous vaccines. The greatest thing of importance is to try to prevent the development of mixed infection, to prevent the caseation and cavity formation, with its consequent abscess, rather than to try to treat it by autogenous vaccines. I grant you the use of autogenous vaccines seems to be a step in the right direction. It is traveling along in the general direction toward the goal we are trying to reach. In the absence of better knowledge, I would not go so far as to say I would not use autogenous vaccines; but I have not much confidence in them. I would rather take advantage of many of the measures at our command in the prevention of secondary infection and subsequent abscess, with pus accumulation in the lungs. When that stage is reached, the percentage of cures goes very far down the scale.

DACRYOCYSTITIS AS A PREDISPOSING CAUSE OF CORNEAL ULCERS.*

BY LEWIS M. SCOTT, M.D.,
Jellico, Tenn.

It is understood, of course, we refer to the serpiginous or pneumococcal type of ulcer, the simple corneal ulcer being due to less destructive form of bacteria, and will not be considered in this connection.

That we will find an infected tear passage in the greater number of serpiginous ulcers of the cornea, there is no question; that the specific microorganism in such ulcers is the pneumococcus, there is but little doubt; and that an injury to the cornea furnishes the point of entrance to such organisms in almost if not all cases, is clearly proven. We need only to consider the destructive nature of the pneumococcus when it invades the lung and pleura, and its fatality to human life, to realize the danger to sight when once it invades the more delicate structure of the eye. The fact of the pernicious as well as the migratory nature of this form of bacillus proves it to be one of the greatest enemies of mankind.

The laboring classes are the principal sufferers from attacks of serpiginous ulcers. This is due to the fact that they are prone to neglect condi-

tions of the nares and lachrymal apparatus needing treatment, the fact that they are more susceptible to eye injuries, and that they are disposed to overlook the importance of early and careful attention to such injuries. Chronic dacryocystitis is usually due to an extension of some catarrhal affection from the nasal mucous membrane by way of the nasal duct. This being true, most cases of lachrymal sac infections could be prevented if early and proper attention were given for the relief of all such conditions in the nares. When once dacryocystitis is well established, anything short of complete obliteration of the sac will be of little effect. We may relieve the trouble for a while by probing and irrigation; but the same underlying conditions still exist, which are liable to set up a reinfection at any time. Just so long as these infected tear passages exist, just so long will the patient be predisposed to corneal ulcers, it only being necessary for a wound upon the cornea to permit the invading microorganism to gain an entrance.

The following four cases coming under my observation during the past few months serve to demonstrate the truth of this assertion:

Case 1: A coal miner, aged fifty, was hit in the right eye by a small piece of coal from his pick three or four days before coming to me for treatment, being forced to seek relief at this time from the severe pain in the eye and head, and not realizing the serious nature of the trouble, as he had continued to mine coal from the time of the injury until he came to me, not having received any attention at the time of the accident. Upon examination, I found the conjunctiva in a very active state of inflammation, the ciliary vessels, both superficial and deep, very much congested. A characteristic creeping ulcer had developed upon the cornea near the pupil. The intense pain, which was accompanied with intolerance to light, radiated to the top and back part of the head. This case, notwithstanding rigid treatment, ran a severe course, followed by all the bad sequelæ—namely, hypopyon, perforation of the cornea, protrusion of the iris, and loss of vision.

Case 2: A coal miner, aged fifty-nine, received a lick in the left eye from a small piece of coal which flew from his pick. Considering the slight injury to be of little consequence, he continued to dig coal for two or three days. The eye then causing him pain, he went to the mine physician

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for treatment. The physician kept him under treatment for ten days. The condition of the eye continuing to grow worse, he then referred the case to me. At the time I first saw him the eye was highly inflamed. A typical serpiginous ulcer was present, being located just above the pupil and extending almost across the upper half of the cornea, all the layers of which were involved. The conjunctiva was red and œdematous, great tenderness of the globe, severe pain and photophobia, the pain radiating to the top and back of head. A hypopyon, which afterwards filled the lower half of the anterior chamber, was present. This case, despite radical treatment, such as the application of pure phenol and the actual cautery direct to the ulcer, doing a paracentesis for the relief of the hypopyon, ran practically the same course as the first, and resulted in blindness of the infected eye.

Case 3: Female, aged fifty-seven. While sitting on her porch, a gush of wind blew a small particle of sand or dust in the right eye. The next day her eye began to give her trouble, and she went to her family physician for treatment. He kept her under his care for two weeks, during which time the eye continued to get worse. She was then referred to me for treatment. At her first visit to my office I found the eye in a very bad condition. A large serpiginous ulcer had developed upon the cornea, accompanied with the usual severe symptoms. The hypopyon which had formed filled up almost one-half of the anterior chamber. She was also suffering from photophobia, together with the characteristic head pains. The pain being so severe in this case and the fact that sympathetic ophthalmia set up in the other eye later, it became necessary to enucleate the infected eye to give relief from the pain and to save the vision in the sympathizing eye. This was not resorted to, however, until after a paracentesis was done (the lachrymal sac having been previously irrigated) and all hope of saving any vision in the diseased eye gone. Exploration of the enucleated eye showed that the infection had invaded the vitreous chamber, the vitreous being infiltrated with pus.

Case 4: A farm hand, aged forty-five, while clearing a piece of ground, was struck in the right eye by the end of a twig from a bush that he was grubbing. He continued at his work for several days, notwithstanding the fact that the eye gave him pain during the time. At the time

he came to me for treatment, which was about one week from date of injury, there was present a typical serpiginous ulcer on the cornea just below the pupil. A small purulent exudate had formed in the anterior chamber. The pain, which was not so severe as in the other three, was present in this case, the remaining symptoms being also of less severity. With the application of phenol and tincture of iodine to the ulcer, the instillation of atropine solution, etc., the ulcer healed in about ten days, leaving no impairment of vision.

In each of the cases I have mentioned there was present a preëxisting dacryocystitis; and, despite the fact that I repeatedly irrigated the tear sac with iodine, boracic acid, and other antiseptic solutions, applying vigorous treatment direct to the ulcers in conjunction with other remedies for the relief of the inflammation, I was only able to save vision in one of the infected eyes, having to resort to enucleation in one.

While I did not send a smear in these cases to the bacteriologist for an examination, I am fully convinced from the clinical symptoms that the infection was due to the pneumococcus in each. We note in these cases the tendency to neglect eye injuries and the inability of the average general practitioner to properly care for diseases of the eye; for had they received proper treatment from the start, vision might have been saved in all of the infected eyes. How exceedingly important is the question of prompt and intelligent first aid to eye injuries! No doubt our National Committee on Conservation of Vision will do much in the way of some means of prevention along this line.

As to the method of obliterating the diseased lachrymal sac, the operation of Harold Gifford, of Omaha, Neb., which he describes in the *Ophthalmic Record*, January, 1915, appeals to me most. He states in this connection that he has never extirpated a lachrymal sac, and says that he has no intention of ever doing so. After infiltrating the tissues well down to the sac with a 1 to 2 per cent cocaine solution, combined with a little adrenalin solution, he incises the sac one-fourth to three-eighths of an inch vertically, beginning the incision about one-fourth of an inch inward from the caruncle, then drying out and packing the cavity with a strip of iodoform gauze, which he leaves in until the following day. He then removes the packing; and after the use of a 10-

per cent solution of cocaine as an anæsthetic and the application of zinc ointment to the skin around the external incision, he puts two or three drops of pure liquefied trichloroacetic acid into the cavity, then mops the interior of the sack in all directions with a small cotton-ball swab. He next dries out the cavity and irrigates with some cleansing solution, then fills the cavity with aristol and applies a moist dressing. Care should be taken to protect the skin well around the external opening with the zinc ointment, as there is danger of injuring this surface with the trichloroacetic acid. As a precaution against infection, before packing with the iodoform gauze, I mop out the cavity with iodine solution.

While my experience is very limited with the operation as outlined by Dr. Gifford, yet I believe the results to any one who elects to adopt his method will be all that he claims.

DISCUSSION ON THE PAPER OF DR. SCOTT.

DR. CHARLES B. JONES, Knoxville: I have been very much interested in Dr. Scott's paper. It is a subject that is very interesting; and it is a disease that I do not like very much to run across, especially when complicated with serpiginous ulcers, because these ulcers do their work so quickly that we are in doubt as to what result we are going to have.

I do not recall having had any case of serpiginous ulcer complicating dacryocystitis, but have had a number from other causes. They are more liable to come in cases of dacryocystitis, because we have the cause right there waiting for an abrasion of the cornea. The cases I have had have been caused from some injury. I recall a case not long ago that ran on for several days before I saw it. The man said he had had sawdust thrown in his eye. When he came to me, there was a large ulcer of cornea. I took my electric cautery and cauterized around the ulcer, being very particular to get out into healthy tissue. I cauterized this one evening, and the next morning was doubtful whether it was spreading or not. Afterwards I found the cautery evidently had stopped the trouble. It was the heat that naturally made it look as though it was spreading; and, fearing it might be, I took my knife and split the cornea entirely across, going back into healthy tissue on each side.

In a great many cases these patients do not come to us until the trouble is far advanced. I have had them so far advanced when they first came that perforation of the cornea had occurred. I remember one case of perforation of the cornea in which the lens came out. That man, however, still has his eye. I have not seen him for a year or two, but had a report from him

stating that he suffered at times, and I think eventually he will have to have the eye enucleated.

As to the treatment in chronic dacryocystitis, I have had some cases to treat in old and middle-aged people, and in the majority of cases have been able to cure them by probing, irrigation, and local medication; while in a few cases I have had to remove the sac.

I have had several cases in infants where there was a great deal of pus, and have been successful in curing them by the above procedure. I do not like to use the probe if I can help it; would rather wash out the sac with a medicated solution and get them well if possible in that way. If I cannot, the next thing is to open with a probe; and if this cannot be successfully done, I take out the sac.

DR. EMMETT L. JONES, Cumberland, Md.: This is a subject in which I have been very much interested for a good many years. It is the biggest little thing in the whole field of my medical practice, and there is very little written about the subject of suppuration of the lachrymal sac as compared with other subjects in ophthalmology. I see vastly more cases suffering from this condition than I do from glaucoma, and yet we have books devoted to glaucoma where we have only a few lines devoted to cases of dacryocystitis. So important do I consider the matter of suppuration of the lachrymal sac that I never operate on the cornea, even for so small a thing as an imbedded cinder, without pressing the tear sac to see whether there is any pus present or not. If you get a suppurating tear sac and an abraded cornea, you will have trouble. I have seen many cases that have come with eyes in which the cornea had rapidly sloughed all to pieces. On pressing the tear sac, out comes the pus. I tell these patients that if they had come a few days sooner we could have saved the eye; in the early cases, that if they had put it off for a few days later they would likely have lost the eye. It is the most destructive process of anything I know, and I have seen numbers of eyes that have been lost by a little delay in consulting the ophthalmologist.

In regard to the treatment, the method I have adopted in treating these cases has been satisfactory. Most of these cases as I get them are emergency cases, and something must be done for them right then and there. When I get a closed tear sac, I think it is better to get rid of that at once; for if the patient should receive a little scratch or a cinder in the eye, he will likely lose the eye, and it is better to get rid of it. I do not believe in washing or probing. I split the sac up, as in the old operation for probing; use cotton swabs, with a little powdered cocaine with adrenalin, holding them in the sac for a while; then take the electric cautery, large point, go right around in the sac, turn it up, and burn it out at the top also. I also split the upper canaliculus. If you do not do that, you will have a blind fistula. I cauterize the ulcer with the same point, give an injection of mercuric cyanide, all being done at the same sitting, and that generally fixes the matter.

DR. E. C. ELLETT, Memphis: I would like to speak of one agent in the treatment of pneumococcus ulcers of the cornea, and that is optochin. I do not know whether you have had any experience with this agent or not.

It has been put out as a specific for pneumococcus infections, and it certainly does for pneumococcus ulcers of the cornea more than any other agent with which I am familiar, particularly cauteries of all sorts—iodine, the actual cautery, carbolic acid, and all the antiseptics I have ever used. It is used in 1 or 2 per cent solution and instilled every one or two hours. I cannot say off-hand what the chemistry of it is, but it is a quinine derivative. It is the only agent I have ever seen that stops infection in a cataract operation.

DR. GEORGE H. PRICE, Nashville: I am interested in this paper for one reason especially, and that is, the doctor's experience with infected corneal ulcers is really out of the ordinary. I see quite a number of patients who receive injuries, but very few have corneal ulcers which result in anything like disaster. It may be there is something in the locality or in the conditions under which these patients work which brings about the infection that the doctor speaks of, in addition to the fact that they have a dacryocystitis. The dacryocystitis may be acute or chronic. Injuries to the eye are exceedingly common, and I expect more so in the doctor's locality, because he is working in a section where coal-mining operations are carried on very extensively; and these miners are frequently hurt, and the infections they get in that locality are more virulent than we have in some other localities.

I have had patients with some disturbances about the lachrymal sac with foreign bodies, but I have escaped the great disasters which have fallen in the wake of those cases which the doctor reports. As I have said, in certain localities we are more prone to have these things than in some others. I see many patients who are injured with foreign bodies in their eyes—railroad patients; and I see them every day almost—some young, some old. I have not had for a long time an infection such as the essayist has described. I have had cases of dacryocystitis that went along without any injury from time to time, but I am satisfied from the doctor's experience and that of Dr. Jones that in many cases the trouble is exceedingly disastrous.

With reference to the treatment, I do not resort to the use of the actual cautery, as a rule, to cure corneal ulcers. I have done that, but sometimes you do not get what you want, or you get more than you are looking for. I have seen some eyes that were badly burned, with a very large scar so badly located that the patient suffered as much as if he had lost the eye, very nearly. Galvano-cautery burns upon the cornea, if deep enough to stop infection which has reached beyond the superficial layers of the cornea, are apt to induce a considerable amount of cicatrization. If the corneal ulcers are extensive and you burn extensively with the cautery, you may have as bad a condition as that you undertake to treat—in some of these cases. I have seen small corneal ulcers infected in which the eyes were lost, but that is a rare thing. I resort to thorough cleansing of these eyes, curetting the ulcers out, so to speak; and I do not, as a rule, apply carbolic acid. I do apply iodine, or I apply iodine and tincture of aconite, equal parts. I clean them out and put dionin powder into the ulcer. I make one or two small applicators. The end of one

of these wooden applicators is drawn down to a fine point, and a small, tightly wound cotton applicator is made. After removing the foreign body, I thoroughly clean out the wound with the point of a scalpel or curette for that purpose, and then ream it out with the tight cotton applicator, and press into it the powdered dionin. That I have found is most efficacious. In addition to that, I have treated corneal ulcers with a preparation made by Reed and Carnrich—namely, protonuclein special. It is the best preparation I have ever used. It has an iodine content, and acts nicely indeed. I anæsthetize the eye and dust it in, or I take some of the powdered dionin and put it right into the corneal ulcer.

I have had two cases of pneumococcus infection in which I tested the secretions for pneumococci. I had one case of pneumococcus infection just a short time ago. We have had a great deal of pneumococcic infection of the nose and throat. I recall having had one patient who had just passed through a siege of follicular tonsillitis, with double peritonsillar abscess. This patient developed a corneal ulcer upon the right eye. Two applications of protonuclein special brought the inflammation to a termination.

In these cases of corneal ulcer the treatment must be radical from the beginning and must be persistent, and these patients must be under the observation and treatment of some one who knows how to give the treatment and not leave it to chance.

DR. CHARLES J. BROYLES, Johnson City: I believe we should treat these ulcers of the cornea after the manner suggested by Dr. Price, and the first thing to do is to clean them. I have had considerable experience in cleansing these ulcers with what I call as "old Samson"—namely, 20-per-cent solution of trichloroacetic acid; then I have followed that with dionin locally in powder form, as Dr. Price described; and then follow always, unless there is some special contraindication, with atropine.

I had one case recently in which I had been using a little trichloroacetic acid just as the doctor described. The case got along slowly; it was a little sluggish. I put dionin for the first time in the eye that day, and it seemed to bring about necrosis of the whole cornea. It sloughed in due time, and I finally had to remove the eye.

I want to emphasize the fact that from the results I have seen, both in my own practice and in that of others, it is good practice to cleanse the eye with iodine or trichloroacetic acid in preference to the use of the galvano cautery. My observation and experience have been that where we resort to the galvano cautery we very often do more damage than the enemy we are already attacking is doing. I believe it is the king of cleansers for corneal ulcers.

DR. LEWIS M. SCOTT, Jellico (closing): While treating the last two cases I have reported, my attention was called to an article in the *Ophthalmic Record* by Dr. Ramsey, of Glasgow, Scotland, in which he reported a number of cases of seriginous ulcers of the cornea treated successfully with a solution of optochin, technically known as "ethyl-hydrocuprein." I tried, through my druggist, to secure some of the medicine, but failed

even to obtain it in any of the large pharmaceutical houses of the cities. Later a friend in the Cincinnati General Hospital sent me a few grains from a small supply which was being used there. It came too late, however, to be of any use in these particular cases. I shall try the remedy in the next case that I am called upon to treat.

Perhaps environment had something to do with the infection in these four cases, since there were quite a number of cases of pneumonia and diseases of the upper air passages in this particular locality just prior to these attacks.

As to the use of the actual cautery, I wish to say that I do not resort to it often, and only applied it in one of the cases reported after all other methods failed.

TREATMENT OF HIP DISEASE.*

BY A. G. NICHOL, M.D.,
Nashville, Tenn.

I am led to present a paper upon this subject because of the variance of opinion that now exists as to the preferable line of treatment of this common condition. Whether it is better to pin our faith to the fixation method of Lorenz and Hoffa or whether traction appliances are to be preferred—this is a question upon which orthopedists differ widely, and each feels that he has ample experience upon which to base his judgment.

Prior to entering the discussion of treatment, a short résumé of the ordinary case is not out of place. Unfortunately, we do not often have the privilege of treating these cases in their incipency; but they most often have gone the rounds and have been subjected to antirheumatic remedies, blistered knees, and have been cursed with the antiquated phrase of "growing pains" and other peculiar ideas of the ailments of childhood. On more than one occasion I have found it necessary to treat a blistered knee and advise that drugs be left off so that the little sufferer might obtain the relief that rest will afford.

In a child, any slight variation from the normal gait should be carefully watched, especially should there exist an intermittent limp which in the beginning is slight and appears following the violent exercise of childhood. For a time the child voluntarily rests up and seems normal, but the limp will again appear slightly more marked

and with a more tardy disappearance. This cycle continues, each recurrence becoming more severe; joint stiffness is evident and the night cry disturbs the sleeping child; a period of increasing deformity is manifest, and then it is that the little patient begins to receive very necessary attention; but in this delay much has been lost.

Should we be so fortunate as to begin rational treatment at this period of the disease, our results, as a whole, would be far better; but such is not usually the case. The destruction goes on; and, as a last resort, the orthopedist is called upon—not to prevent destruction and deformity, but to correct deformity and endeavor to arrest the diseased process.

It is unnecessary to describe the pathology, for this is well known to you. You are likewise familiar with the symptomatology in the main, but especial stress should be laid upon the early manifestations—namely, intermittent limp, night cry, limitation of joint motion, and the referred pain at the knee.

I feel justified in emphasizing this statement: That all children who limp should be carefully examined, and the physician should not be satisfied until he has eliminated the possibility of hip disease. It is in these early cases that we can accomplish most good.

In the consideration of the treatment of hip disease we must have clearly in mind what we wish to accomplish and then decide upon the most efficacious means to bring about the desired results. In all cases our primary objects are the relief of pain, the prevention or correction of deformity, and the arrest and cure of the disease. In the great majority of cases the relief of pain may be brought about by rest in bed and the application of an appliance that will afford rest to the injured limb. This may be accomplished by any one of the various apparatus that produce traction, which traction will greatly immobilize the diseased member and will prevent the spasmodic contraction of the strong thigh muscles. The Buck's extension, the traction brace, and other allied appliances will in practically all cases accomplish the desired end. These appliances will likewise do much toward the correction of deformity. In beginning treatment, the traction should first be applied in the axis of deformity, with a gradual change toward the normal position. In late untreated cases it will often be necessary to use a certain amount of manipula-

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

tion of the limb with the patient anæsthetized, when the deformity may be corrected, provided organic changes have not occurred which block a full correction. When acute symptoms have ceased and the deformity disappeared as far as possible, we must then select the most appropriate method of ambulatory treatment. Ambulatory treatment has the support of the great majority of orthopedists, though Calot, one of the foremost, maintains that absolute rest is nearer ideal. That may be true when surrounded, as he is, with every element desired in a sanitarium, but is not applicable under any other condition.

The original method used in America, and still used by some, is the traction brace, devised by Davis, perfected by Taylor, and modified by many. Of these, the Bradford abduction and traction splint seems most practical. Of recent years many of our foremost American orthopedists have abandoned the traction brace as routine and have been converted to the idea of fixation, which was originally advanced by Mr. Thomas, of Liverpool. He accomplished fixation by the use of his hip splint. This splint is not widely used at present, but has given way to the plaster-of-Paris spica, popularized by Lorenz and Hoffa, which is more practical in many ways and can be used without the assistance of a mechanic.

There is still a controversy as to the better method of treatment—traction or fixation. Traction is still enthusiastically supported by some of our foremost Americans, especially Allison, of St. Louis. On the other hand, the fixation method has been adopted in many of our larger clinics. The advocates of traction maintain that the end results are better in that you get a larger percentage of cures with motion; that abscess occurs with less frequency and there is less shortening. These contentions are not altogether concurred in by those who prefer the fixation with plaster of Paris.

There are many who strongly hold that a cure with ankylosis in a good position is the best result obtainable in a case of tubercular hip, and direct their treatment to this end. I do believe that this is too radical and should not be adhered to, and it is my opinion that in those cases with slight bone destruction such an effort should not be made; but, on the contrary, in cases where marked destruction has occurred, especially with involvement of the head and acetabulum, a firm

ankylosis is the most serviceable end obtainable, with less liability to injury and recurrence.

Heliotherapy, as it has been developed by Rollier, is of a most decided value in the treatment of any form of tuberculosis, especially the surgical variety. The Rollier method consists of exposure of the patient to the direct rays of the sun. The complete exposure is brought about gradually. In the beginning the foot is exposed for a short interval—five minutes; on the next day this exposure is increased and the leg is exposed for five minutes, gradually increasing the amount of body exposed until the individual is exposed entirely naked. After the treatment is under way, the body becomes deeply tanned, and the individual tolerates extremely low temperature with no discomfort. This mode of treatment is now being used extensively in this country with most gratifying results. In order that the Rollier technic may be faithfully followed, it is almost essential to insist upon institutional care; for, as we all realize, it is a most difficult matter to have mothers carry out minute details. However, a modified treatment suited for home care will be productive of gratifying results. There is much recent literature upon this subject, and I have seen none other than encouraging reports, especially the reports of Pryor, of Buffalo, and Hammond, of Providence. It is not well to become too enthusiastic over this treatment, but in all cases the injured part should receive mechanical protection and support in the best possible position for future usefulness.

In considering this subject, I am led to conclude that the most important factor is in an early diagnosis, when we are often enabled to prevent deformity and limit the amount of destruction. Early fixation in recumbency until all pain spasm and tenderness have subsided, followed by ambulatory treatment without weight bearing, the limb being fixed in a long plaster of spica, is to be commended. When weight bearing is possible without pain, it may be allowed. In the latter part of treatment the short spica of Lorenz may be used with greater comfort to the patient, and allows the use of the leg muscles and prevents much atrophy in convalescence. A supporter brace is used, to be removed at night, gradually discarding appliances when all evidence of active disease has disappeared. In some cases it is advisable to use the traction method, especially should there be marked involvement of

acetabulum; but as routine the fixation with plaster of Paris is to be preferred, because of the certainty of adjustment and the assurance that the parents cannot disturb your appliance and otherwise interfere with your mechanical intent.

It must be admitted that there are many arguments in favor of the traction method; but after weighing both sides well, I feel that there is more to be gained by fixing the patient in plaster spica than a brace that is often a source of much discussion and manipulation on the part of the parent and the spoiled child.

Of very great importance in either method is to continue supervision of all cases over a long period of time, and under no conditions to dismiss a case until all signs of active disease have disappeared.

This paper is a plea for careful observation of all cases, giving especial attention to the earliest symptoms, and the institution of measures that will prevent deformity and limit disease, thereby lessening the number of miserable cripples that are all around us.

DISCUSSION ON THE PAPER OF DR. NICHOL.

DR. C. A. ROBERTSON, Ridgetop: The treatment of hip-joint disease should be approached with reference to at least three classifications of the condition. First, we have to deal with hip-joint disease without abscess formation; second, hip-joint disease with abscess formation; third, hip-joint disease with abscess and fistula formation.

The treatment of these three classes of hip-joint disease materially differs because of the conditions present.

In the first class of hip-joint disease without abscess formation, the indications for treatment lie mainly in fixation of the joint and a general régime applicable to the treatment of tuberculous conditions generally, with great emphasis placed upon the methods of heliotherapy.

Going rapidly over an epitome of the treatment of these conditions, we will consider next the treatment of cases with abscess formation. Adding to the treatment applied to the first class of cases, it should be the purpose always to exercise more diligence in the prevention of fistula formation in the cases in which abscesses have developed. We should never allow a fistula to form if it is possible to avoid it, and, fortunately, in the great majority of cases this can be done by the proper aspiration of these cases after the method of Calot—approaching the abscess at an angle, going through the healthy tissues as far as possible, evacuating the pus whenever there is tension within the abscess cavity endangering the integrity of the wall of the abscess.

I have had considerable experience in the use of

Calot's fluid—that is, the injection of iodoform, ether, creosote, and guaiacol mixture—which seems to bring about a very satisfactory sterilization of the abscess cavity. Not infrequently we meet with the difficulty of aspirating very thick and ropy pus, and I know of nothing that is better in liquefying pus under these conditions than Calot's modifying mixture, which is a solution of camphor-naphthol in glycerin. However, if the pus is liquid and easily aspirated, this modifying mixture is not necessary. After the formation of a fistula, you have to deal with a very much more serious condition as to the life of the patient than any of the previous forms mentioned. Fistula thus formed and persisting gives an opportunity of mixed infection that becomes a matter of great difficulty to deal with.

Now, in connection with other forms of treatment that have been in vogue by the orthopedists, there is nothing that offers a greater hope of shortening the time of treatment and arriving at a period of ultimate cure than the judicious and proper application of solar rays.

DR. A. G. NICHOL, Nashville (closing): Dr. Robertson has brought out very forcibly exactly what I am trying to emphasize. In those cases he is discussing, the emphasis, without a question of doubt, should be put on an early diagnosis and the institution of early treatment; and if you get the cases in that stage, you will not likely have that condition so often as you do at the present time. In my paper I could not in the short time allotted me go into every phase of the subject of hip-joint disease, because one could consume three days of the association's time and then not be through. Dr. Robertson brought out the point I wish to make—namely, to watch these cases early, make a diagnosis in the beginning if possible; if you cannot, there is hip irritation. And the same general laws of treatment hold good—namely, rest; and when you rest these cases, you get a favorable condition for arresting the disease early, and you do not have that condition which is so frequently seen in tuberculosis.

THE PROSTATIC PROBLEM.*

BY GEORGE P. ZIRKLE, M.D.,
Kingston, Tenn.

Having to contend with the offending prostate in several old men lately, I am constrained to consider the gland from the viewpoint of the clinician rather than from that of the surgeon. Statistics suggest to us that from 30 to 35 per cent of men past the age of fifty years and possibly 70 per cent of men past seventy years of age, have some trouble with the prostate gland. The prostate is an accessory reproductive organ, and herein probably lies the explanation of the

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etiological factor in the pathology under consideration. We find the gland made up of three types of tissue—fibrous, muscular, and glandular—situated at the neck of the bladder, through which the urethra passes for a distance of about one and one-fourth inches when the gland is of normal size. Hypertrophy of the gland is what I wish to especially consider, together with some conditions that frequently result—obstruction (partial or complete) of the urethra, cystitis, pain in the gland and in the distribution of the sciatic nerve.

Simple enlargement, so long as it does not interfere with the free emptying of the bladder, does not cause much discomfort, and the attention of the patient is rarely directed to it; but should it be the cause of retention, partial or complete, it continually reminds one of its presence. What is the etiological factor in the production of the hypertrophied conditions of the gland? It is most probably due to the introduction of the ever-prevalent gonococci, which most young men of the past and present are, or have been, acquainted with, to their sorrow. In getting the history of these prostatic cases, I almost invariably find that the patient has had gonorrhœa during his early life; and believing that once infected, always infected, or the result of infection remaining to remind one of youthful folly, I am satisfied that we can here safely place the credit for this disease of the prostate in old men. The normal gland weighs about five drams, and this may be increased to five or six ounces in hypertrophied conditions. We, by examination through rectum and urethra, may judge as to the size and consistency of the organ, also form some idea as to whether the overgrowth is benign or malignant, remembering not to depend too much on the physical signs present. When we find the gland of uneven contour, with hard fibrous projections over its surface, we naturally think of cancer—more especially so when blood is found in the urine which can be traced to the prostate. The physical signs may point strongly toward malignancy in the hardened prostate, and yet we find that mistakes are frequently made as to this point in arriving at a diagnosis. I have seen a pyogenic infection of the prostate reduce the patient to an almost unmistakable picture of malignancy, and yet after months I am confident that malignancy does not exist.

The fibrous element of the gland being in-

involved, in excess of the muscular or glandular, we would naturally expect to find the gland of firmer consistency; and in this class of cases we may expect to have more or less trouble in the use of the soft rubber catheter because of greater resistance. The large, spongy prostate, in which the glandular and muscular elements predominate, usually does not offer much resistance to the passage of a catheter through its urethral channel and does not cause the inconvenience that the hard fibrous organ does. Whatever the cause of these tissue overgrowths, let it be from the long-continued irritation due to the gonococci, directly or indirectly, or to an infection by other microorganisms, or to a hormone of testicular origin, as some investigators seem to think, we still must contend with the pathology arising therefrom and endeavor to give what relief we can to those who are unfortunate and seek our aid.

These cases may be divided into four classes:

1. In this class we place all those who have slight symptoms referred to the prostate, such as increased frequency of urination (more noticeable at night), a slight discharge of whitish color not due to sexual excitement, a slight difficulty in starting the stream of urine, and perhaps a slight dribbling at the end of urination. These are a few of the symptoms noticed in early involvement of the prostate, and should have careful consideration at the hands of the physician. I very much fear that this class of patients do not receive enough care by the medical attendants, and are passed by with the idea that the bladder is out of order and that a urinary sedative is all that is necessary.

2. In this class we find a number who have progressed from Class 1, and, because of their prostatic condition, they are fit subjects for the surgeon. The prostate, like any other offending organ, when the means at the hands of the physician are inadequate to afford relief or cure, should be removed.

3. In this class we place those whose condition is such that operative procedure would be right and proper, but for various reasons will not submit to this means of relief. There are quite a number belonging to this class—more especially is this true in rural communities and small towns—who would be good surgical risks, but are averse to the use of the knife and demand that this be a means of last resort.

4. In this class we place those who are poor surgical risks. Some may have other organic diseases, perhaps of the heart or kidneys, that would preclude any major operative procedure. The general health may be broken down, due to the complications arising from the obstructing hypertrophied prostate; retention of urine, with decomposition of same; and the early involvement of the bladder in septic processes, which may later involve the kidneys by way of the ureters. It is unfortunate that the physician must of necessity have the care of these patients who belong in this class, as the means at his command will not afford the relief sought and that could have been given when conditions were better. The prostate and bladder will surely become infected sooner or later, when the catheter must be depended upon to drain the urine away. The question presents itself as to the best method of caring for these cases in which the gland serves to obstruct the urethra sufficiently to require the use of the catheter and which will not consider operative interference. The patient should be carefully trained as to the use of the catheter, and it should be impressed upon him that eternal vigilance in the matter of a sterile catheter and clean hands is the price of comparative safety. The patient using a catheter should be taught to never anoint the catheter with his bare fingers, but should place the substance used for this purpose on sterile gauze or cotton and draw the catheter through this and never to touch the part of the catheter which is to enter the bladder. It is our duty to see that the urine is acid at all times, as infection does not take place so readily. An alkaline urine is very prone to ammoniacal fermentation, which is irritating to the bladder and also affords a good culture medium for bacteria.

The catheter should be used at regular periods, often enough to prevent any undue tension in the bladder and that straining effort to empty the bladder which we frequently see in patients who have prostatic obstruction. Patients who have large congested prostates should be warned against intercourse, as the condition will be aggravated thereby, and may be the cause of acute obstruction, in which we may have much trouble in entering the bladder with any catheter, either metal or rubber.

I have observed some involvement of the sciatic nerve in cases of prostatic infection, in which

much pain and discomfort were added to the primary trouble. The relation that may exist between the prostate and the sciatic is a question that may well claim our attention at times. We should make an effort to exclude the prostate in any painful condition of the tissues supplied by this nerve.

In conclusion, I am satisfied that the hypertrophied prostate of men past middle age can be traced back to its incipency—a case of posterior gonorrhœa. The enlarged pathological prostate is the price that is demanded of those who worship, without license or control of passion, at Hymen's altar. As physicians, I think it our duty to warn the young men of to-day as to the pitfall that is before them, and thereby save them from the menace to the happiness of the old man—the hypertrophied prostate.

AN ANALYSIS OF ONE HUNDRED CONSECUTIVE CASES OF APPENDICITIS OPERATED UPON AT THE NEWELL CLINIC.*

BY E. DUNBAR NEWELL, M.D.,
Chattanooga, Tenn.

Practically all of these operations were done during the years 1914 and 1915. In our classification we will divide the cases according to the conditions we found at the operation and what we did at the time of operation. These are all cases that were operated on primarily for appendicitis and do not include any cases that were operated on primarily for some other condition and in which the appendix was removed because it, too, was inflamed or in some way abnormal.

Of these one hundred cases, in seventy-five we did not use a drain of any kind, and there was *no death*. In this series of seventy-five cases we have included the chronic appendices, the subacute cases, the cases of ordinary acute appendicitis where the infection was confined entirely to the appendix, and the cases where the appendix was tense from infection and pus and where there was some plastic exudation and some seropus.

In twenty-five cases of this series of one hundred cases we did use a drain of some kind, and in this series there were five deaths. In this

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drainage series are included gangrenous appendices, ruptured appendices with localized peritonitis, and abscess cases. In the gangrenous cases, with only slight involvement of the surrounding tissues, we usually use a small, soft rubber drain or a cigarette drain for forty-eight hours. Where the appendix had been ruptured, a soft rubber tube was used, and in the abscess cases two soft rubber tubes were used—one inserted low down toward the pelvis and the other inserted over the base of the appendix.

In the seventy-five nondrainage cases the stump of the appendix in every instance was ligated and inverted and covered with the stump of the mesoappendix. In the cases where the appendix was gangrenous, but no abscess cavity, the appendix was removed in every instance, and there was no death in this series.

Of the twenty-five drainage cases, in eight the appendix was not removed. The appendix was not removed, as there was a large abscess cavity in each instance, the patients were all in a serious condition, and the appendix could not have been removed without breaking down extensive adhesions and prolonging the operation to a dangerous limit. Of the five deaths, in only one case had the appendix been removed. During the time that this series was taken, in not a single instance did we fail to operate on any case because it was too far advanced, even though we felt sure the operation would not relieve, and so advised relatives and friends. We were always willing to give the patient the benefit of the slim chance for life, even at the expense of adverse criticism and of our statistics. In several of the drainage cases the duration from the onset to the time of operation was less than forty-eight hours; but in none of the five deaths was the duration less than five days, and in one case it was twelve days. A more convincing argument for early operation could not be made.

We believe that almost any of the methods of preparing the skin are satisfactory, provided the skin area around the incision is snugly covered with towels to protect the intestines and omentum from contact with the skin. In all cases, except when we simply open an abscess cavity, we make a large incision; and the cecum is brought up into the opening whenever it can be done without much traumatism, and sponges are seldom used to pack back the intestines; and when they are used, they are always wrung out of hot water.

In drainage cases, most sponges are used to protect uninfected areas of intestines and to protect the walls of the incision. In all cases the intestines are handled with the greatest care and gentleness. When the stump of the appendix cannot be easily inverted, it is ligated and the stump cauterized with carbolic acid and some attempt made to cover it with the peritoneum, the meso-appendix, a tag of fat, or the omentum. In all drainage cases we use chromic catgut.

We think that the proper time for operation for appendicitis is when the diagnosis is made. If for some reason the operation cannot be done as soon as the diagnosis is made, then we know that these patients should not have food, and to give them purgatives is damnable. In all of our five cases that died, purgation had been pushed to the extreme before we operated. Dr. R. Bland Williams, of the United States Navy, in a report of 324 consecutive cases of appendicitis operated upon without a death at the Naval Hospital at Norfolk, makes this pertinent comment:

"We have been fortunate in not losing any of these late cases, but attribute this result largely to the fact that in nearly every case an early diagnosis was made, and *food and purgatives were withheld from the beginning.*"

If we can induce all the doctors who first see these cases of acute appendicitis not to allow them to have food or purgatives, we could all have the same favorable statistics that the navy surgeons have.

The after treatment of the nondrainage cases is not important if you have done clean, gentle surgery, as the patient will be so comfortable that he will require little nursing and less medication. Usually one hypodermic of morphine following the operation is sufficient, but we do not hesitate to give more if the patient is suffering. S. S. enemas to relieve gas pains are given early and often; no purgatives until four to five days; usually no food for forty-eight hours, and none then if there is nausea or abnormal distension. Whenever there is gastric distress, use stomach pump. In the drainage cases, use Fowler's position, pass six ounces of warm water into the rectum every four hours, begin early with S. S. enemas to relieve gas pains, and do not use purgatives as long as there is a drainage tube in the wound. If there is any indication of acidosis, use glucose and sodium bicarbonate. The drainage tubes are left in as long as there is any drain-

age from the bottom of the cavity, substituting smaller for larger tubes as the drainage gets less.

There are some cases of appendicitis that get well without an operation; there are many so-called cases of appendicitis that get well without an operation; but if you want all of your cases of appendicitis to get well, then make an early diagnosis, and, while you are waiting to make the diagnosis, do not feed or purge, and operate, without regard to the duration of the disease, as soon as you have made the diagnosis of appendicitis.

TUBERCULOSIS OF THE COLON.

By W. C. DIXON, M.D.,
Nashville, Tenn.

CASE REPORT.

R. W.—Age, 26; colored; female; married.
Admitted June 16, 1916.

Complaint: Pain in right side of abdomen.

Family History: Mother died following abortion; father living and well; one brother living and well; several brothers died in infancy; one



Will Cook Spain Vanderbilt

TUBERCULOSIS OF THE COLON.

Lymph Gland Showing Giant Cells, Fibroblasts, and Caseation Necrosis.

sister living and well; several sisters died in infancy; no tuberculosis or cancer in family.

Past History: Ordinary diseases of childhood; two months ago was in Vanderbilt Hospital, complaining of pain in abdomen and back, but left after a short stay much improved; menstruation began at fifteen years, always regular and normal until birth of child eighteen months ago; since then has only menstruated once; has three children living, three dead, and one miscarriage.

Present Illness: Patient comes to the hospital complaining of pain in the right side of the abdomen, low down. Yesterday (June 14, 1916) she was seized with pain in the right lower quadrant, which was only relieved by morphia. She vomited, was chilly, and thinks she had some fever. Since then she has had soreness in the abdomen, more marked on the right side. She had her first attack similar to this eighteen months ago, and since then she has had a num-

ber of these spells. She is weak and has lost some weight.

PHYSICAL EXAMINATION.

Patient is a rather poorly nourished negro woman twenty-six years of age. There is no oedema or jaundice. Pupils, equal in size and react to light and distance. There is no strabismus, nystagmus, or exophthalmos. Teeth show some pyorrhœa. Mucous membranes, pale. Throat, negative.

Heart: P. M. I. not seen. No thrill. Outline, normal. No accentuation. No murmurs heard. Arteries, not sclerosed. Pulse, equal on both sides, regular, and synchronous with the heartbeat.

Lungs: Expansion equal on both sides. Vocal and tactile fremitus, normal. Percussion shows normal resonance. Air enters all parts of both lungs. No rales.



X-Ray Picture Showing Large Six-hour Retention in the Stomach, Dilated Cecum, and Narrowing in the Colon at Hepatic Flexure Due to Tubercular Tumor.

Abdomen: Symmetrical in outline. Soft. No organs or tumors felt. Patient complains of pain on palpating the right lower quadrant. No rigidity.

Inguinal, epitrochlear, and cervical glands palpable. Skin and joints negative. Knee jerks respond normally. No Babinski or ankle clonus.

Vaginal examination. Moderate perineal tear. Cervix, torn. Uterus, retrodisplaced and fixed. Tenderness in fornices, but no mass. Leucorrheal discharge.

Urine: Amber. Sp. Gr. 1020. Reaction acid. Sugar negative. Albumen negative. Microscopical examination negative.

WBC., 7,000. Hemoglobin, 75 per cent.

Wassermann. Negative.

X-ray examination of the alimentary tract showed a large six-hour retention in the stomach. The cecum was dilated, and above it was a narrowing of the colon. This was interpreted to be partial obstruction, probably due to adhesions.

Operation: June 22, 1916. A median incision was made. Examination of the pelvic viscera showed some adhesions and a retrodisplacement. The secum was found dilated, and in the ascending colon near the hepatic flexure was a mass, approximately two inches long, surrounding the entire lumen of the bowel. It produced so much narrowing that the finger could not be passed through. There were many enlarged glands near the mass and in the mesentery of the small intestine, as much as a foot or eighteen inches from the ileocecal valve. The mass and the glands were hard and nodular. The peritoneum was normal. A gland was removed for examination. Thinking the condition to be malignant and too extensive for resection, I did a lateral anastomosis between the ileum and the transverse colon beyond the mass. In spite of the six hours' retention, the stomach and duodenum were both normal. The patient made an uneventful recovery.

PATHOLOGICAL REPORT.

Source of Specimen: Gland of mesentery.

Time Removed: June 22, 1916.

Gross Pathology: A small lymph gland about 7 mm. long.

Microscopic Pathology: Section shows lymphoid tissue, which is infiltrated with round cells, plasma cells, and fibroblasts. The fibrous tissue of the gland capsule is thickened. There are

some small areas of necrosis and many giant cells.

Diagnosis: Tuberculous lymph gland.

September 18, 1916.

A report from the patient says she feels well, is able to do her work, and has gained considerable weight.

If it had been known at the time of operation that this was a tuberculous process, resection would have been the procedure indicated. Believing it to be malignant, resection was out of the question on account of the extensive glandular involvement.

Tuberculosis of the cecum is a fairly common finding; but a massive tubercular involvement of the colon, such as this evidently was, must be comparatively rare, judging from the literature which I have consulted.

"CO-OPERATION" WITH PROPRIETARY PREPARATIONS.*

BY K. S. HOWLETT, M.D.,
Franklin, Tenn.

A few weeks ago a traveling representative of a certain "baby food" visited the physicians of Franklin (and probably all other Middle Tennessee towns were likewise favored) and presented a proposition so unique and enticing that it would probably be well for this association to give it careful consideration.

In the beginning, it should be stated that an injustice is done this wonderful food by calling it a "baby food;" for the manufacturers have eliminated the word "baby," and on the wrapper and sheet of directions, which always accompanies a package of it, one learns that it is "not only an ideal food for babies, but also good for the sick, the aged, the infirm, the convalescent, and even those in perfect health, whose nutrition is much improved by it."

We are further informed (to quote literally) that it is "a scientific compound of cereals, partially dextrinized to make digestion easy. When heated in milk, every particle bursts like a tiny grain of popcorn, and these million bursting particles break the tough curd of the milk into soft, tiny flakes, so easy to digest that even infants

*Read at the meeting of the Middle Tennessee Medical Association, Lewisburg, May, 1916.

given up as dying have received immediate benefit." A "million" bursting grains of popcorn reminds one of a certain modern fairy story, which, like this food, is intended primarily for children's consumption, but is much enjoyed by grown-ups as well. "Naturally, a food so perfectly adapted to the weak stomach of a baby may be expected to digest without taxing the adult stomach. Furthermore, milk modified by this food digests so quickly that a glass [not a glassful, mind you] may be taken every hour, when nourishment is the main problem, as it frequently is with invalids."

But it is not milk only which is so marvelously improved by the addition of this food, for we are further informed that "as a soda-fountain drink it is delicious. It makes ice cream more fluffy and mellow, and appears to rob coffee of its bad effect at night. It improves the taste and adds to the value of chocolate, vichy, Apollinaris, cream soups, and [*mirabile dictu!*] eggnog." Think of anything that would improve the taste of eggnog!

The sheet further advises the mother to "trust to directions, which have cured [sic] hundreds of babies perhaps [how modest the perhaps!] worse than yours, and in a few weeks your baby will be well."

Then follow two paragraphs which seem slightly contradictory—viz.: "This food overcomes the constipating effect of cooked milk;" and almost immediately following: "It sometimes appears constipating at first." Like the old negro's black-walnut bark, which, if scraped up, will check the bowels, but, if scraped down, will act as a purgative! However, as to this food, the apparent contradiction is explained by the statement: "But after the bowels become accustomed to its use, they will act regularly."

So, after all, this marvelous food leaves a little something for nature to do, and sometimes even a little medicine is needed. However, it will not be necessary to call in a physician to prescribe it, as careful and minute directions are given the mother: "When your baby has *looseness of the bowels* ["diarrhoea" might be too technical], give a good dose of castor oil [about one tablespoonful] three-quarters of an hour or so before its first feeding. This is for the purpose of cleaning the baby's stomach out and giving this rich, wholesome food a chance." The mother is further advised to give common baking

soda "to lessen the acidity accompanying teething and eczema;" also to give milk of magnesia in constipation "for the purpose of cleaning out the bowels, as it is mild and alkaline [like lime water] and no harm comes from using it daily as long as necessary." So, also, it seems necessary to add something to this perfect and well-nigh complete food, as the mother is advised to "sometimes give boiled water, and even fruit juices, to your baby."

At the very end of the sheet of directions the following is placed in bold type to show its special importance: "Almost invariably when trouble is experienced in using this food we find that the mother is not following directions strictly. Read this slip through frequently and *send for free book*, 'The Baby's Health and Food,' which gives special help in all common troubles in infancy. Drop a postal card to-day for further information."

This "free book" is, indeed, a treasure of art and literature, with its tinted pictures of naked babies, perfect specimens of infantile beauty unadorned, and its brilliant letters of praise and commendation from eminent M.D.'s, plain doctors, as well as profoundly grateful mothers. It contains many other interesting and enlightening statements too numerous to mention in this paper; but what has been given will, like Mercutio's wound, doubtless suffice to interest any and all progressive and enterprising doctors.

The traveling representative or promoter of this food is as much of an artist, in his way, as is the compiler of this "free book." He has a ready answer for any objections or doubts that one might mention. For instance, when it is mildly suggested that nature usually makes provisions for its babies and that mother's milk is possibly, after all, the best food for them, one is confounded with the statement that this food shows 98 per cent successful, which is better than even mother's milk; and one can but acknowledge that mother's milk does fail in more than 2 per cent of our modern babies.

But this promoter has a plan for interesting the doctor in this food which is much more effective than merely presenting the marvelous virtues of the food itself. The manufacturers desire to increase their capital stock two million dollars in order to increase the output and meet the growing demand for the product. There are capitalists in the city where the home factory is

located who would gladly take all this new stock, and stand ready, even clamorous, for it: and the entire two millions could be readily placed without any soliciting or without sending out any promoter. But the company desires not only capital, but *coöperation* as well. Hence it was decided to generously offer this stock to the members of the medical profession, limiting the amount of stock that any one physician could buy, so that the stock would be widely distributed. One hundred dollars was the limit, so that the stock would be distributed among twenty thousand physicians in order to raise two million dollars. This is divided into ten shares of ten dollars each, five shares to be paid for in money and five shares to be paid for in *coöperation*. This stock is only offered to a select few in each town—those physicians who are leaders of the profession of their respective towns and whose standing and influence is such as to make their "*coöperation*" most desirable; and in order to secure such physicians as stockholders, the promoter stands ready to meet all objections and to make any reasonable concessions. Even the fifty dollars need not be paid all at once, but can be paid in installments to suit the purchaser.

The responsibility and good faith of the company, as well as virtues of the food, are vouched for by letters from well-known physicians in one's own state and even one's own town. These letters give receipts for dividends on stock already paid, and incidentally laud the food highly, though as to the latter the writer is usually modest enough to request that his name be not used publicly in advertising the food. When one mildly expresses some doubt as to the strict ethical propriety of physicians buying this stock and writing these letters, these doubts are at once quieted by the exhibition of the name of some prominent physician of one's acquaintance, mayhap even of one's own town, probably (and preferably) the president or secretary of his local medical society, as an advocate of the food and a stockholder in the company. One is informed that this physician has spoken in praise of this food before the local medical society and has furnished the representative with the names of grateful parents whose babies' lives have been saved by it.

Furthermore, an array of names is presented of renowned physicians of Nashville, including a majority of the professors in Vanderbilt Med-

ical School, superintendents of Nashville hospitals, etc., who are also stockholders as well as enthusiastic advocates. One is informed that it is given the preference in every hospital in Nashville. It is shown that with twenty thousand such physicians as stockholders, each furnishing his share of "*coöperation*," the sale, and incidentally the profit, of this concern must increase rapidly, and instead of a paltry 6-per-cent dividend, such as is guaranteed, the company will soon, as other companies have done, pay 25, 50, mayhap even 100 per cent dividend. And the figures are presented to show that this is both possible and probable. If one still hesitates, then the trump card is played, and one is forever silenced by the information that so stanch an exponent of strictest medical ethics, so wise, so cautious, and so prominent an official as the Secretary of the State Medical Society himself, that best-known and best-beloved medical statesman, our own Dr. West, is a stockholder in the company! [Not now! Our one share, thoughtlessly taken, has been surrendered.—Ed.] When one recovers consciousness after this knock-out blow, the promoter is ready with the order for stock filled out, with nothing to do, save to sign one's name.

Surprising to state, however, even then, I myself failed to sign up—not that any further objections remained to be offered; but it struck me that if we were going to sell our "*coöperation*" at all, why not make it bring a big price? Why confine ourselves to one proprietary baby food? There are many proprietary preparations used by members of the profession in these days. Why not select the most popular and widely used of these proprietaries, or concoct new ones to be made popular by judicious advertising, form a medical trust (we have already been accused of doing so) officered and controlled by members of our own profession? The idea has already been cautiously approached by a certain "*coöperative*" laboratory of Chicago and also by a certain Nashville pharmaceutical company.

But why let outsiders in at all or confine ourselves to so small a scale? Surely the profession has been sufficiently commercialized in this day to produce some enterprising "promoter" from our own ranks to work out this plan in shrewd and careful detail and on the largest scale. Let us adopt "big-business" methods, outstrip the patent-medicine octopus, and make the mere-

splitting of fees look like thirty cents. Let us exploit our *coöperation* at its full value and not sell it to outsiders at fifty cents on the dollar. Some antique and unique and entirely out-of-date idealist in the profession may spring the Hippocratic oath or the Code of Medical Ethics on us; but, in these modern days, surely mere scraps of paper will not be allowed to stand in the way of the schemes and ambitions of kings or men.

What say ye, brethren? *Quo Vadimus?*

SENILE PROSTATIC HYPERTROPHY.*

BY H. L. FANCHER, M.D.,
Chattanooga, Tenn.

The prostate is a firm, elastic, and contractile organ, composed of striped and unstriped muscle fibers and connective tissue. It lies between the penis and bladder, and is perforated by the urethra. It also has the ejaculatory ducts coming from the seminal vesicles on either side, perforating its base and converging in its center where they enter the floor of the urethra. This triangular space, formed by the ejaculatory ducts below the neck of the bladder, when enlarged, forms the so-called "middle lobe." The normal prostate has no distinct lobes, but completely encircles the neck of the bladder, just as a horse collar encircles the horse's neck. It is when the organ enlarges, seeking the line of least resistance, that the fibers of fascia fall together in places where resistance is greatest, that the so-called "lobes" are formed.

The prostate, when one disregards its urethral perforation, is shaped very much like a horse chestnut and weighs about the same as a testicle. It may be noted here that the active evolution of the two begins at the same period, at puberty, and that the structural and functional development of one is intimately associated with that of the other during the period of sexual vigor.

The prostate is purely a generative organ, and does not aid in any way the urinary functions. Its glands secrete a thin mucus fluid, which dilates and gives bulk to the semen. The contractile power of its muscle fibers initiates the forward propulsion of the mingled prostatic and seminal secretions, and at the time of orgasm assists the

deep transversus perinei and bulbo-cavernosi muscles in ejaculation.

After middle life, or at the time of the beginning decline of the sexual vigor, the prostate should begin atrophic changes, just as does the uterus in woman; for its purposes have been fulfilled and its presence is no longer needed. However, at this period, from some cause unknown, the prostate often begins hypertrophic changes which cause inconvenience, disability, suffering, invalidism, or even death. Hypertrophy in many organs is compensatory and necessary to the well-being of the individual, but hypertrophy of the prostate is a degenerative process which makes it pathological from the beginning. Being located as it is, like a collar around the urethra and vesical neck, and fixed in its position by the suspensory and triangular ligaments and pelvic fascia, and its enlargement being in the lines of least resistance, gives, as its chief symptom, obstruction to the urinary flow as it encroaches on the urethra and vesical neck, thereby narrowing their lumen.

The first symptoms of obstruction from prostatic hypertrophy coming on after middle life is a sluggish stream, with dribbling at the last part of urination. Following this, the patient must urinate more often than normal and requires some effort or straining; and often by this time the urine has an odor of ammonia, which is evidence of residual urine with ammoniacal decomposition. As the obstruction increases, more effort is required to urinate, with more frequent and urgent desire; then pain, bladder distention, constant dribbling, or the catheter period. The secondary changes in bladder, ureters, and kidneys from back pressure and infection close the sad chapter of these unfortunate and preventable symptoms in progressive prostatic hypertrophy.

The diagnosis is easy from the chain of symptoms given above coming on after middle life. However, prostatic obstruction must be differentiated from intraurethral obstruction, such as strictures, polipi, etc.

Radium, X-ray, electricity, massage, hydrotherapy, local and systemic medication do not cure or materially decrease the size of these hypertrophied prostates. Complete enucleation as early symptoms become distressing is simple, safe, quickly done, and permanently cures. The cases with great distention and thin bladder walls

*Read by invitation before the Knox County Medical Society, July 25, 1916.

must have their urine gradually withdrawn, and infected cases must be drained and irrigated for a few days prior to operation.

As to the technic of the operation, very little need be said; for it is now standardized and perfected until nine-tenths of the surgeons are using practically the same method, with the exception of some of the minor details. Suprapubic opening with bladder distended with fluid, enucleation with the ungloved index finger, beginning deep in the urethra at the apex of the gland where blood vessels are fewest, with two gloved fingers of the other hand in the rectum to push up and steady the prostate, enucleating from above to either side, the prostate is easily delivered from its capsule. Bleeding is quickly checked by hot irrigations through the urethra and gauze compression in the now small contracted pocket from which the gland was removed. A two-way drainage tube inserted through the suprapubic opening for an inch within the bladder, the tissues closed snugly around the tube, with stay sutures to hold the tube in place, and plenty of gauze and cotton to catch the escaping urine, constitutes the ideal toilet of the wound.

CONCLUSIONS.

1. The prostate is so located and arranged anatomically that it tends to produce urinary obstruction when it becomes enlarged.
2. It is purely a generative organ, and useless after that period of life when man, from age, should not beget children.
3. Its hypertrophy, after middle life, is in no sense compensatory, but evidence of a degenerative process, and, by its progressive tendency, causes discomfort, suffering, invalidism, and premature death.
4. Its enucleation is simple, safe, and quickly done, and is *justified* when, after middle life, symptoms of obstruction are progressive and causing distress.

Prostatectomy is *demande*d when obstructive symptoms are progressive and interfering with proper rest and sleep by pain, dribbling urine, or catheterization.

Since the report on money subscribed at Knoxville for the prosecution of "quacks" was put in print a check for \$50 has come in from the Memphis and Shelby County Medical Society and one for \$2 from Dr. W. Scott Farmer.

THE SURGICAL TREATMENT OF SOME TUBERCULAR CONDITIONS.*

BY WILLIAM BRITT BURNS, M.D.,
Memphis, Tenn.

I am encouraged by a limited satisfactory experience in the surgical treatment of tubercular conditions to offer this phase of the great subject of tuberculosis for your consideration at this time.

In 1901, at the International Medical Congress held in London, Koch made the startling declaration that the bovine tubercle bacillus was not pathogenic for the human species. This was strongly combatted at the time by men in every way as capable as Koch, and the discussion and investigations which followed led to the refutation of the claim and established the very important discovery that the tubercle bacillus may and does penetrate the mucous membrane and finds its way into the blood stream—via the lymphatics and thoracic duct—without affecting or infecting the mucous membrane or intestinal wall.

"The passage of the tubercle bacilli through the uninjured intestinal mucosa was first discovered by Orth in 1879, Cornet in 1880, and Dobro-linski in 1890." This process is markedly enhanced during the process of digestion, particularly of fat.

The years following Koch's declaration have led the investigators to show that there is some doubt as to an aërogenous infection by the tubercle bacillus. Von Behring and Calmette are quite emphatic in the position that the intestinal route is by far the most frequent. Calmette and his colleagues hold the view that even pulmonary tuberculosis is of intestinal origin. They say that animals breathing an atmosphere containing carbon do not develop anthracosis when the œsophagus is closed; but, on the other hand, anthracosis of the lungs is rapidly produced by the introduction of carbon into the stomach. Injections of tubercle bacilli into the stomach of guinea pigs produced pulmonary lesions, according to Schlossman and Engel. "Huss and Lobstein, Gaffsky, Frosch, and others, at the 1907 Congress, favored inhalation as the more important method of infection in man. At the same time Weichselbaum and Orth expressed the

*Read at the meeting of the West Tennessee Medical and Surgical Association, Jackson, May, 1916.

opinion that we are not able at the present time to state which is the more common mode of infection." So it is that we may have primary and single infections of the different organs of the body.

LUNGS.—In 1821, Carson, of Liverpool, found by experimenting on rabbits that he could produce collapse of the lung by allowing air to fill the pleural cavity through an incision between the ribs. He believed that this would fix the lung. He thought that if the lungs could be kept quiet, lesions of these organs could thus be made to heal. Forlanini, an Italian, made similar observations. Neither of these made any practical use of the method upon human beings. Murphy and Lemke used nitrogen gas by injection into the pleural cavity for the cure of tuberculosis of the lungs, and, after a reasonable time, Murphy reported their findings at the Denver meeting of the American Medical Association in 1898. I had the pleasure of hearing Lemke's report of 1,500 cases a year later at Columbus, O. Many cases of pulmonary tuberculosis were cured by this method. The method, however, was practically dropped at Lemke's death. Recently they have begun using the method in Europe. This is a surgical procedure worthy of careful and earnest employment. In 1904, with the above idea in mind and recalling the fact that air allowed to enter the abdomen often seems to cure tubercular peritonitis, I resected a rib, followed a sinus into the anterior mediastinum, and removed two tubercular mediastinal glands, with a rapid and complete cure.

POTT'S DISEASE.—*Tuberculosis of the spine* is now coming into the field of the general surgeon, and, in place of the plaster, leather, and metal jackets and fixation board and gas-pipe frame, the orthopedist himself is cutting down upon the vertebræ and splitting spinous processes and inserting bone grafts. Dr. F. H. Abbee, of New York, has reported 104 cases of bone grafting, with 100 per cent successful, in the various stages of spinal tuberculosis—some psoas abscesses, some with paralyses.

Tuberculosis of the cranial bones is not an infrequent occurrence, and usually perforates either by cheesy degeneration and sequestrum or, less often, by granulations which gradually invade the bone and finally the dura, subdural space, and the brain convolutions. The surgical treatment is by curette and pincers until all dis-

eased bone is removed, and the tubercular process in the dura, pia, and brain are attacked with suitable cutting instruments, even to cutting wide into healthy brain tissue. The results are slow, but finally are satisfactory. Out of forty-six trephine and decompression operations upon the cranial bones and brain for injuries and diseases, I have not encountered a tubercular condition.

RIBS.—I have operated for tuberculosis of the rib in two instances where the rib was resected of its diseased process. The gross pathology was obviously tubercular in each instance. Both of these patients were cured. Tuberculosis of the ribs is probably only an occasional occurrence. The treatment is by curettement and drainage and resection.

LONG BONES.—The invasion and progress of osteitis and osteomyelitis of the long bones are quite similar to tubercular processes in bone elsewhere. The treatment is by conservative methods—curette and chisel, iodine and iodoform packs, plaster dressing with windows and braces, being careful not to remove too much bone at a time. Some cases may be suitable for complete removal of the tubercular process and the inlaying of the healthy graft from the opposite tibia, etc. The cure requires months and sometimes years.

In 1907-8 I had a boy twelve years old who came in the hospital with an extensive osteomyelitis of the tibia and whom I treated by the expectant plan above mentioned—that of a long incision the full length of the tibia and chiseling and curetting down to what appeared to be healthy tissue. The trough was packed with iodoform gauze and allowed to remain with a plaster cast over all for fourteen days. When the packing was removed, the trough presented beautiful, healthy granulations, and there was no pus, except at the upper and lower ends of the incision. Repeated light packings were carried on until the trough was filled with new osteogenetic tissue and granulation tissue over all. In due time skin grafts were put on the long-denuded area, all of which grew by the first intention. The boy put on weight and grew rapidly. While he was practically clear of fever all the time after the initial curettement, he ran a fast pulse up to the skin grafting. After this the pulse dropped to normal—the morning following the graft of the skin. The Thiersch method was employed. Three subsequent minor cu-

rettements of sequestra of bone effected a cure. He remained in the hospital about eighteen months. I have thought that a bone graft would have proven the proper procedure when the first pack was taken out in this case.

KIDNEY.—Renal tuberculosis is responding brilliantly to surgical procedure. The surgery of the tubercular kidney is essentially modern. Only a few years ago pus in the urine was diagnosed a cystitis *per se*. Guyon, a distinguished French urologist, comparatively recently declared that "we do not know of a single case of renal tuberculosis primitive and unilateral without lesions of the same kind in the bladder, the seminal apparatus, or the other organs."

The diagnostic methods of recent years have unfolded several sets of cases of clinically primary renal tuberculosis. Israel found twenty-two out of thirty cases, or 73 per cent; while in Kelly and Burnham's one hundred cases the disease was limited to the kidney or kidney and bladder in thirty-eight. They also show that every case of bladder tuberculosis was apparently primary in the kidney and that the bladder was secondarily involved. In thirty-eight cases operations were performed, and they all remain well after more than six years.

The treatment of renal tuberculosis is epitomized as follows:

Prophylactic — Medicinal (tuberculin), climatic, hygienic.

Surgical — Nephrectomy, nephrotomy, nephrostomy, partial resection.

Murphy's table of the ultimate results of nephrectomy for the cure of the tubercular kidney follows:

Kumel—32 of 43 patients living and well.

Aebarran—34 of 39 patients living and well.

Kelly—Complete cure in 21 where the bladder was not involved, and in 18 of 36 where the bladder was extensively diseased.

Israel—11 of 29 cured.

Kuster—11 of 17 cured.

Schede—16 of 22 cured.

Czermy—11 of 27 cured (secondary nephrectomy done in 16).

The operation mortality is from 3 to 10 per cent.

EXTENSION THROUGH THE URETER.—At one time it was thought the ureter was the road of infection to almost every case of tubercular kidney. Now, and for the last ten years, not a few

urologists are holding that ureteral infection never occurs. This grew out of the fact that most cases experience extreme vesical distress before the kidney is involved. Kelly and Burnham consider an ascending infection of the kidney through the ureter as extremely rare, and state that they have never seen a case.

BLADDER.—What is said of the ureter is, in the main, true of the bladder. In the study of *Post-Mortem Specimens*, Kelly and Burnham state: "So far as we are able to discover, there is not a single case on record where tuberculosis has been found limited to the bladder and ureter." "Such cases, if common, would have been recorded. Also the majority of specimens studied show the tuberculous process in the kidney to be manifestly older than that found in the bladder." The mode of infection of the kidney with the tubercle bacillus is through the arterial blood system.

APPENDIX.—Primary tubercular appendicitis is extremely rare. Out of some 200 appendectomies, I have never seen it.

Tuberculosis of the epididymus, testicle, prostate gland, and seminal vesicle is fairly frequent. All are treated surgically, the rete testis being preserved when possible on account of its internal secretion. Tuberculosis of the penis in babies is a frequent occurrence as a result of the Hebrew right wherein the mother or the *morhel* arrests the hemorrhage by sucking the penis.

DOCTOR:

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THE SECRETARY

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Independent Life Bldg., Nashville, Tenn.****OCTOBER, 1916****EDITORIALS****OMISSION OF NAMES.**

In the list of names of members of the Tennessee State Medical Association in the September Journal only fifty-five were given for Hamilton County. The following forty-two names should have appeared on the Hamilton County list. The editor regrets that this error was allowed to get by, and does not know how it occurred, since the names of members were put into print for the September number.

HAMILTON COUNTY.**CHATTANOOGA.**

Drs. Frank Trester Smith, John B. Steele, Joseph W. Johnson, N. J. Minter, M. A. Meacham, John B. Has-kins, O. M. Hayward (Reeves, Ga.), E. C. Anderson, Willard H. Steele, Samuel H. Long, H. L. Fancher, O. L. Blackwell (Worley), E. H. Byrd (East Chat-tanooga), J. S. Dye, S. S. Marchbanks, Charles H. Gurney, J. F. Hager (Alton Park), J. D. L. McPheeters, Daniel N. Williams, B. S. Wert, Vaulx Gibbs, W. T. Hope, A. T. Ingalls, George R. West, J. S. B. Wool-ford, W. G. Bogart, E. B. Anderson, P. D. Sims (City Hall), E. E. Reisman, G. Manning Ellis, H. P. Larimore, N. C. Steele, W. A. Applegate (1300 Pennsylv-ania Avenue, Washington, D. C.), W. M. Bogart (North Chattanooga), G. Victor Williams, D. C. Shelton (Jas-per), John H. Revington, J. H. Barnett, R. B. Watson (North Chattanooga), D. King Summers, Ebb. C. John-son, and K. D. Davis.

**WORK OF THE STATE BOARD OF
HEALTH FOR RURAL SANI-
TATION.**

The Tennessee Legislature of 1915 was asked for an appropriation of \$10,000 for the State Board of Health, to be used in carrying on the work of a Bureau of Rural Sanitation. An appropriation of \$5,000 was made, depend-ent upon the securing by the Board of Health of a like sum from the International Health Commission (now the International Health Board of the Rockefeller Foundation). The

International Health Commission provided more than the specified sum, and with this money and that granted by the Legislature, together with the appropriations of \$300 each from certain counties, the Bureau of Rural Sanitation has conducted "community health campaigns" in ten counties. In some of these counties most gratifying success has been at-tained, while in others results have not been so satisfactory—a condition of affairs which will most certainly obtain in any undertaking. Taken altogether, the specific results from this work have been up to expectations, and the value of applied sanitation as a means of dis-ease prevention has been definitely demon-strated.

For more than five years, with money pro-vided by the Rockefeller Sanitary Commission, the Board of Health carried on an active cam-paign for the education of the rural popula-tion of the State in matters pertaining to health conservation. The work for the reduc-tion of the prevalence of hookworm disease was the central feature of this five years' State-wide campaign. Through this move-ment, the first undertaken in Tennessee in which the service of the State Board of Health was ever taken direct to large masses of the population, great good was accomplished in the way of centering the attention of the people upon the tremendous economic loss suffered by the State because of preventable disease and in building up a sentiment favorable to the organization and support of public agen-cies designed to protect the public health. The fact that a large territory had to be cov-ered by a very limited force of workers, to-gether with the fact that this was the first "field work" of any particular moment which had ever been undertaken in the State, made it impossible to secure any very extended re-sults in the way of applied sanitation in the rural homes and schools of the State. The people were made acquainted with the facts that Tennessee was overrun with communica-ble and preventable disease and that the means of prevention were capable of being applied by them, but there was little time and less means to do "follow-up" work through which they could be persuaded to apply in their own homes and schools the sanitary measures which were recommended. It was for this reason that the State Board of Health and its coöperating agency, the International Health Commission, instituted the plan of procedure under which the Bureau of Rural Sanitation

has operated during the last fifteen months—the community plan.

It goes without saying, that if specific results are to be gained in any movement, the work that is done for their attainment must not be dissipated over an area larger than can be thoroughly covered by the force of workers available. It was thought—and the results have shown the correctness of the idea—that if three strictly rural communities, consisting of not more than one hundred and thirty families, should be selected in each county and thoroughly surveyed to determine existing conditions as to the prevalence of communicable disease and as to the reasons for its prevalence; and that if the people in these communities should be acquainted with the facts as they were found to exist; and that if they were given such helpful instruction as was possible; and that if they were invited, persuaded, and urged to apply in their homes and schools the sanitary measures which are believed to be efficacious in the control of disease, these communities could be brought up to a state of comparative preparedness against certain of the more easily disseminated and more easily controlled diseases which are responsible for much of the sickness and death that come to our rural population each year. The idea was to make a persistent effort to sanitize as thoroughly as could be done every home and school in each community. The aim has been to secure some sort of sanitary privy and to have screens provided in every home in each community, if possible; to have water supplies properly protected; to have nuisances of whatever kind abated; to do whatever could be done to put the three communities in each county in the best possible sanitary condition, in order that these communities might have the health of their own people protected and that they might serve as stimulating examples to other rural communities.

Up to this time considerably more than half the homes of the communities covered by the work have been provided with some type of sanitary privy. A comparatively large number of the homes which were found without screens for the exclusion of flies and mosquitoes have been screened, partially or completely. A great number of wells and springs have been curbed, and numerous nuisances which menaced health have been abated. Helpful literature has been distributed, and popular health lectures have been delivered wherever an audience could be had. Most of the schools

in all of these communities have been provided with septic tanks or with some less effective type of privy. In several counties proper sewage disposal systems have been installed for jails and poorhouses. Ten counties have been covered by this community work up to October 1, 1916.

Agitation is good, education is better, but application is best in this matter of disease prevention. The public health agency which really accomplishes anything worth while in reducing death rates and morbidity rates must be able to secure the actual using by the people of those means which will help to prevent disease. That is just what the Tennessee State Board of Health is trying to do. Our population is largely a rural population, and the very largest part of the work of a State health department in Tennessee should be done in rural districts. Cities can, and incorporated towns should be able to take care of themselves and enforce the rules of sanitation. The health of cities, however, is largely dependent upon the health or lack of health of the country people. Typhoid fever, hookworm disease, dysentery and diarrhoeas, malaria—all are rural diseases which flourish first in the country and from there invade the cities. Applied sanitation in rural homes and schools is the thing most needed for the protection of Tennessee's health. This is what the State Board of Health is striving for and what it is believed can be accomplished if opportunity is given for adequately carrying its work to the people themselves in their very homes.

The Legislature of 1917 will be asked for an increased appropriation for the State Board of Health, to be used in extending and improving the work of the Bureau of Rural Sanitation. Other States are spending far more money in this work than is ours, and they are getting results in the way of reduced death rates and reduced morbidity rates. Why not Tennessee, the best State of them all?

PROOF OF THE VALUE OF RURAL SANITATION.

There is a country community in a Tennessee county which has been cursed with an undue amount of typhoid fever every year for a long time. This year, as a result of the work of a Field Director of the State Board of Health in the community during a period of three months, not a case of typhoid fever had

shown up to the time of our last information, about four weeks ago. Privies were built, homes were screened, mosquito-breeding ponds were filled up, trash was carried away. That's all.

A letter received at the office of the State Board of Health by the State Director of Rural Sanitation from a gentleman who acted as an assistant in the "community health campaign" in his community says: "We have had considerable typhoid in and around X—, but listen! Not a case in any home where we built sanitary privies. I am building privies this week." In this community the coöperation of the people was withheld to a larger extent than usual when the health campaign was in progress. Those who failed to respond to the appeals of the workers have now come to see the value of sanitary closets and screens in fly time, which is to say typhoid time.

HISTORY TAKING.

A paper in this number on "Some Features of History Taking" is chock full of good sense, and can be studied with benefit by every reader of this Journal. More time is wasted on the taking of useless histories than upon any other feature of the process of making diagnoses. More opportunities for making correct diagnoses and for securing real information to serve as the basis for direction of intelligent treatment are lost by reason of failures to take proper histories than are lost in any other one way.

Get the history of your case, but get the things that mean something. That is the proposition presented in the article above referred to. It is a sound proposition. Read it.

REPORT ON FUND FOR PROSECUTION OF QUACKS.

The following report of moneys received from subscriptions made to the fund for the prosecution of illegal practitioners at the Knoxville meeting is made pursuant to instructions given the Secretary by the House of Delegates:

Contributing \$5 each: Drs. Robert Caldwell, E. C. Ellett, Marcus Haase, H. M. Tigert, Jere L. Crook, W. D. Haggard, G. H. Price, W. C. Dixon, O. Dulaney, W. F. Clary, W. T. Black, W. M. McCabe, A. B. Dancy, S. T. Parker, W. A. Howard, J. T. Moore, H. E. Lar-kins, C. Holtzclaw, A. G. Nichol, W. C. Campbell, W. H. Witt, R. A. Barr, Eugene Johnson, C. R. Martin, W.

R. Nash, R. E. L. Smith, O. N. Bryan, J. McC. Hogs-head, J. L. McGehee, L. W. Haskell, J. P. Handly, C. N. Cowden, S. S. Crockett, L. E. Burch, B. S. Wert, L. L. Sheddan, J. B. Cross, M. M. Copenhaver, W. R. Wal-lace, E. T. Newell, T. F. Fitzgerald, W. F. Christen-berry, Duncan Eve, Jr., C. N. Drake, William Gaylor, Joseph H. White (U. S. P. H. Service), C. B. Jones, E. H. Baird, W. A. Bryan, Olin West—\$250.

Contributing \$3 each: Drs. J. H. Barrett, S. E. John-son, A. F. Richards—\$9.

Contributing \$2.50 each: Drs. B. M. Tittsworth, R. W. Griffin—\$5.

Contributing \$2 each: Drs. C. P. McNabb, B. L. Owsley, W. B. Burns, W. S. Farmer, D. J. Roberts, F. B. Reagor—\$12.

Contributing \$1 each: Drs. T. O. Henderson, C. D. Robbins, S. H. Hodge, B. E. Cline, J. I. Huggins, N. H. Toefoe, W. B. Lovingood, M. A. Beasley, W. S. Fancher, W. R. Irish, W. J. Breeding, Olin West, J. B. Blair, J. S. Campbell, W. O. Brickell, H. Lockhart, J. D. LeQuire; names not given, \$23—\$39.

Contributing \$50: Nashville City Hospital, superin-tendent and internes (check of Dr. W. M. McCabe)—\$50.

Contributing \$25: Staff of Watauga Sanitarium (check of Dr. C. A. Robertson)—\$25.

Total paid, \$390.

Subscriptions amounting to \$175 have not yet been paid. It is only fair to state that some of those whose names are here given had contributed other sums prior to the Knoxville meeting.

The Secretary has paid to Dr. G. P. Zirkle and to Mr. B. H. Littleton, attorney, all the money that has come into his hands, and has paid an extra dollar into the bank in order to keep the account alive. A detailed report of receipts and expenditures will be made to the House of Delegates at the next annual meet-ing.

U. S. P. H. SERVICE STUDY ON HEALTH INSURANCE.

Twenty-five out of every one thousand em-ployees in American industries, according to recent statistics, are constantly incapacitated by sickness, the average worker losing approx-imately nine days each year on this account. This "noneffective rate" for the great army of industrial workers in the United States barely suggests the total money loss to em-ployers and employees. The lessened efficien-cy, the effects of reduced earnings in times of sickness, as well as the cost of medical atten-tion, and the economic loss from deaths, swell the cost to industry and to the nation to almost incalculable figures.

That much of this loss is nothing less than preventable waste and that this waste can be largely reduced by a properly conducted system of governmental health insurance for wage workers are conclusively set forth in Public Health Bulletin No. 76, containing the results of a study of "Health Insurance—Its Relation to the Public Health," just issued by the United States Public Health Service.

The preventive value of health insurance is given especial emphasis in this study. "Any system of health insurance for the United States, or any State, should at its inception have prevention of sickness as one of its fundamental purposes," says the bulletin. "This country should profit by the experience of European countries, where prevention is being recognized as the central idea necessary to health insurance if health insurance is to attain its greatest success in improving the health and efficiency of the industrial population."

Such a system, it is pointed out in the bulletin, would—

1. Provide cash benefits and medical service for all wage earners in times of sickness at much less cost than is now possible. Adequate medical relief would thus be placed within the reach of even the lowest-paid workers, who are most subject to ill health.

2. Distribute the cost among employers, employees, and the public as the groups responsible for disease-causing conditions, and afford these groups a definite financial incentive for removing these conditions. This can be done by means of small weekly payments from employees, supplemented by proportionate contributions from employers and government at a rate reducible in proportion to the reduction of sickness.

3. Become an effective health measure by linking the coöperative efforts of the three responsible groups with the work of national, State, and local health agencies, and by utilizing these agencies in the administration of the health-insurance system.

4. Afford a better basis for the coöperation of the medical profession with public health agencies.

5. Eliminate the elements of paternalism and charity-giving by making employees and the public, as well as employers, joint agents in the control of this fund.

"A governmental system of health insurance," concludes the study, "can be adapted

to American conditions; and when adapted, will prove to be a health measure of extraordinary value."

THE SOUTHERN MEDICAL ASSOCIATION.

The tenth annual meeting of the Southern Medical Association will be held at Atlanta, November 13, 14, 15, and 16. A very large attendance is looked for. There were twelve hundred and fifty doctors at the 1915 meeting at Dallas, far removed from the center of the territory from which the Southern draws its members. It would seem reasonable to expect two thousand at Atlanta, a city easily reached from all parts of the South, and a city with splendid hotels.

The leading feature of this year's meeting will be the clinics to be conducted by visiting clinicians from all over the South. These clinics will be in the lecture rooms and amphitheaters of the Atlanta Medical College and the Grady Hospital. The general session and section meetings will be in the Auditorium. Reduced rates have been granted by all roads east of the Mississippi River.

AN EXTRACT.

What follows is taken from the most excellent presidential address of ex-President Dr. E. C. Ellett, read at the last annual meeting of the Tennessee State Medical Association. It is one of the many good things contained therein.

"In the multitude of papers which are written, published, and sometimes read, it is curious to see how seldom the writers really do themselves credit. This is usually due to haste or to the fact that one tries to make a twenty-minute paper out of the material for an epigram. A short paper will attract attention. The first description of the changes in the retinal vessels in arteriosclerosis was a single paragraph in a paper by Mr. Marcus Gunn, and all the material that has been written since that time has not added one idea to what was expressed in that paragraph. The other side of the shield is the individual who makes his facts fit his theories. Garbled statistics, misquoted cases, and facts otherwise perverted have gone to make up many a smooth-sounding and impressive paper which reflected great credit on its skillful author. . . .

"If one ever expects to report anything or to write any papers, the habit of the proper keeping of case records should be early acquired. One's tendency a first is to record too much, from which he quickly passes to recording too little. It has always seemed to me that undue prominence has been given to the fam

ily history in record making; and as one whose faith is more in environment than in heredity, my idea would be to concentrate on the personal history and that of the present illness. . . .

"Parenthetically, let us strive to clothe our matter in language that is pure and simple—not only pleasant to read, but easy to understand."

NOTES AND COMMENTS

There are 1,571 names on our 1916 membership roll.

Who ever saw a doctor look like and act like the one in the moving picture?

We have seen some doctors act like they thought they might get into a "movie."

Dr. W. C. Dixon, Nashville, spent two weeks at the Mayo Clinic in September.

Does anybody know why only one name has been reported from Crockett County?

Or why Hamilton County has only ninety-seven names on the roll for 1916?

Dr. and Mrs. W. H. Witt, Nashville, spent two weeks at French Lick in September.

Dr. J. J. Frey has removed from Springfield to Nashville, where he will practice in the future.

Don't let up! Go to every meeting of your County Society. It will "do you good, and help you, too."

Can anybody tell us why only one hundred and forty names have been reported from Davidson County?

The Bradley County Medical Society entertained some thirty or more Chattanooga doctors at the August meeting.

Dr. and Mrs. Owen H. Wilson, Nashville, toured through Kentucky, Indiana, Illinois, and Michigan during September.

There are still a great many old members whose names have not been reported for 1916. Go after them and get them in.

The dates of the semiannual meeting of the Middle Tennessee Medical Association—November 16, 17. Franklin is the place.

Dr. E. H. Jones, Secretary of the Rutherford County Medical Society, sent in the names of three new members in September.

The Harrison law has been fairly picked to pieces. What departmental rulings have failed to do to it is fast being done by the courts.

Dr. William Litterer spent two weeks in September in the wards of Willard Parker Hospital, New York, studying poliomyelitis.

Dr. J. Victor Henderson, formerly of La Follette, assumed his duties as house surgeon at the Woman's Hospital, in New York, on October 1.

A letter from Dr. H. P. Larimore, Secretary of the Hamilton County Medical Society, informs us that this has been a fine year with this society.

Dr. Willis C. Campbell, Memphis, read a paper before the Chattanooga Academy of Medicine and the Hamilton County Medical Society on October 6.

Dr. Martin H. Fischer, Cincinnati, will deliver an address before the Chattanooga Academy of Medicine and the Hamilton County Medical Society on the evening of October 20.

Dr. James W. Jobling, of Vanderbilt University School of Medicine, attended the meeting of the East Tennessee Medical Association at Jefferson City, and delivered an address before the Association.

The Journal wants to know what members of the Association are doing, where they have been, whether they have come back, and anything else that might be of interest to their friends. Drop us a note.

The U. S. P. H. Service and the medical profession of America sustained a severe loss when Surgeon R. H. von Emdorf died. His great work on malaria prevention will surely bear results of inestimable value, especially in the states of the South.

These big insurance companies are about to break loose on the medical examiners again. It is worth five dollars for any competent, honest doctor to make an examination of an insurance "risk." Few competent doctors will do it for less.

Here is where the county society can get in its oar: Do like the Monroe County Medical Society and some others have done—notify Mr. Insurance Company that no member will make examinations for less than five dollars.

Old Knox has one hundred and fifteen members; Shelby lacks just one of an even two hundred; Sullivan-Carter-Johnson has fifty-four; Hawkins, a new county, has twelve; and many other counties are right "up to the scratch."

The announcement of the East Tennessee Medical Association was not received in time for insertion in the September Journal. The semiannual meeting was held at Jefferson City on October 12, 13. We know it was a good meeting—it always is.

The Journal has had its attention directed to the fact that Parke, Davis & Co., Detroit, are celebrating their fiftieth anniversary this month. In common with all of those who like to see enterprise and honesty in business win, the Journal is interested in the success of this great concern, and extends congratulations and good wishes.

The Third Annual Clinical Congress of the Chattanooga Academy of Medicine and the Hamilton County Medical Society will be held at Chattanooga on October 20. Clinics will be held at the various hospitals throughout the day, and Dr. Martin H. Fischer will deliver an address in the evening. A banquet will be tendered the visitors and guests of the Society.

What do you know about the metric system of weights and measures? The United States Pharmacopœia and the new National Formulary have adopted the metric system and have excluded our old, familiar drams, grains, ounces, and scruples. If you have any "scruples"

against the metric system, you might as well throw them away, too.

A few complaints have been received lately from members who have failed to receive the Journal. In every instance the name of the member complaining has been found on our mailing list with the address sent in by his county Secretary. If you have missed any number of the Journal, "kick," and the matter will be looked into. If the trouble is at this end, it will be corrected at once.

SOCIETY PROCEEDINGS

OBION COUNTY.

At its regular monthly meeting in August the Obion County Medical Society studied "Infantile Paralysis;" essayist, Dr. M. A. Blanton. Eleven members were in attendance, and some spirited discussion of the paper followed its reading.

The matter of building a hospital at Union City was discussed, plans of a proposed building having been submitted to the society.

J. D. CARLTON,
Secretary.

BEDFORD-FRANKLIN-COFFEE COUNTIES.

The Bedford County and Franklin County Medical Societies met with the Coffee County Medical Society at Ovoca on August 17.

This meeting was called to order at 11 A.M. by Dr. S. S. Moody, President of the Bedford County Society, with the following present: Drs. Vaughn, Farris, Horace Farrar, C. M. Farrar, McAfee, Newman, Ray, Dossett, Griffith, Mitchel, and Fields, of Coffee County; Drs. Hulin, Grizard, and Walker, of Franklin County; and Drs. Moody, Ray, Reagor, Patton, Woods, Thompson, Taylor, Pyatt, and Freeman, of Bedford County.

Dr. C. N. Cowden, President of our State Association, and Dr. Davidson, of South Carolina, were also present.

Dr. Dossett gave us a cordial welcome and the highest honor of welcome according to ancient custom, presenting us with the "Golden Key of Welcome" to Ovoca, Tullahoma, and Coffee County as a whole.

Dr. L. A. Thompson, of Bellbuckle, read a good paper on "Pleurisy;" and after the discussion was opened by Dr. Mitchel, of Tullahoma, the paper was discussed freely by those present.

This brought us to the dinner hour, and all repaired to the elegant dining room of the hotel at Ovoca, where we feasted on good things given us by our Coffee County brethren.

At the afternoon session we had a paper by Dr. E. P. Vaughn, of Manchester, on "Apoplexy;" and the discussion was opened by Dr. Ray, of Bedford County.

Dr. Newman, of Tullahoma, read a paper on "Plan of Delivery in the Interest of the Perineum and Floor of the Pelvis." Dr. Newman's paper elicited quite a warm discussion *pro* and *con*. Dr. Newman contended that by instructing and having the parturient woman breathe deeply during the height of uterine contraction it would not only stop the voluntary efforts of labor, but would modify the involuntary contractions and thus retard the expulsive effort so as to give the soft parts time for dilatation sufficient for delivery without injury to the pelvic floor.

Dr. Cowden made an interesting talk, urging all to renewed effort in behalf of the State Association, and outlined some new plans of work which the State Association would endeavor to inaugurate at the coming meeting next year.

This meeting of the physicians of the three counties, as above, was full of interest, and all were glad they were there. It seemed like an adjourned meeting of either the Middle Tennessee or Upper Cumberland Medical Societies, and we are sure that great strength will come of such meetings to the efforts of organized medicine. We congratulate the Coffee organization on its efforts to come forth with a good county society; and while it is only recently organized, great good has already come from its efforts. Coffee has the men to make one of the best societies in our state, and it will be heard from in no uncertain way.

F. B. REAGOR,

Secretary Bedford County Society.

HENDERSON COUNTY.

The Henderson County Medical Society met in regular session on Tuesday, August 15, with the President, Dr. R. H. Milum, in the chair.

Minutes of the previous meeting were read and approved.

Dr. W. T. Watson and Dr. S. T. Parker were appointed by the President to attend the Tuberculosis Conference at Jackson, Miss.

Dr. S. T. Parker read a paper on "The Treatment of Puerperal Eclampsia," which was discussed freely by all members present.

Several interesting cases were reported by different members present.

Dr. G. A. Brandon was appointed by the President to read a paper at the September meeting on "The Care of the Pregnant Woman."

SAMUEL T. PARKER,

Secretary.

FAYETTE COUNTY.

The Fayette County Medical Society met with its President, Dr. George W. Brinkley, at Fayette Corner, Tuesday, August 1, in regular monthly session. The members and visitors who were so fortunate as to be present will never forget the joyful occasion. The memory of the good things we had at Dr. Brinkley's will be talked about and laughed about by the tired doctors for many days to come. No program was mapped out by the Secretary and President for any medical papers, but we were told to come and have a good time.

There were present the following members of the Fayette County Society: Drs. Rust, A. O. and J. O. Boals, Morris, Parks, Ballard, Williams, Boswell, Crawford, Brinkley, and Albright; from Hardeman: White, from Cedar Chapel, and W. S. Cocke, from Whiteville; from Haywood: J. S. Rawlins; from Memphis: Black, McCown, Clary, and Burns.

Dr. J. A. Albright, of Somerville, acted as master of ceremonies.

After invocation by Dr. J. S. Rawlins, and stew and barbecued lamb and shoat; cake, cream, and melons; red lemonade made according to special formula by Cocke, of Whiteville; and after the writer had prepared with ice and salt special grape juice which arrived on the German submarine, all present were entertained with stories of the long ago by Drs. Rawlins, Boals, and Cocke, the two former telling us of the difficulties they experienced in practice before the war and the difficulties of the antebellum doctor without thermometer, hyposyringe, microscope, etc.;

while the latter made a special talk on woman suffrage and the difficulties he himself experienced at occasions of this sort, since his stomach had been taken out and the stomach of an animal substituted therefor, together with sequela resulting therefrom. Talks were made by Drs. Morris and Crawford and the Memphis fraternity, all full of joy and enthusiasm at the delightful reception given them by Dr. Brinkley.

We ate and we ate and we drank and we drank, and came home with pleasant recollections and the thought: "It is pleasant for brethren to dwell together in unity." "DOCTOR."

OBION COUNTY.

Some very interesting debate developed at the last two meetings. Dr. M. A. Blanton gave the paper, a good one, on "Poliomyelitis" at the last meeting. Dr. Watson mentioned the exaggerated extension as a proper treatment, and on this point the society divided.

Out-of-town physicians—notably Drs. Darnell, Havener, and Roberts—were present, and were tendered lunch by the locals.

It was decided to hold the October meeting on Reelfoot Lake, and perhaps invite some special talent from Memphis, if any could be had. Dr. J. B. Havener will be the essayist, and the topic "Scarlet Fever."

J. D. CARLTON,
Secretary.

HENDERSON COUNTY.

The Henderson County Medical Society held its regular monthly meeting Tuesday, September 12, 1916, in Lexington, with Vice President Dr. W. T. Watson in the chair. The minutes of the August meeting were read and approved.

Interesting cases were reported by the following doctors, and liberal discussion followed: Dr. C. H. Johnston, a case of "Infantile Paralysis;" Dr. George A. Brandon, a case of "Paralysis;" Dr. J. T. Keeton, a case of "Meningitis;" Dr. W. I. Howell, a case of "Gastric Ulcer;" and Dr. C. E. Bolen, a case of "Infantile Paralysis."

Dr. W. B. Keeton made a motion that we have the annual election of officers at the next meeting, and a dinner. Seconded by Dr. G. A. Brandon, the motion carried, and Drs. W. F. Huntsman, J. M. Arnold, and S. T. Parker were appointed as a committee of arrangements.

This was one of the best and largest meetings of the year. The following doctors were present and took part in the program: J. P. Joyce, W. I. Howell, C. E. Bolen, J. T. Keeton, R. L. Wylie, W. B. Keeton, E. G. Maxwell, J. M. Arnold, W. F. Huntsman, G. A. Brandon, C. H. Johnston, W. T. Watson, S. T. Parker.

SAMUEL T. PARKER,
Secretary.

MAURY COUNTY.

The Maury County Medical Society met in regular session Monday, September 4, 1916, at Columbia, with President Dr. H. A. Gant in the chair. There were thirteen members and one visitor (Dr. Hardison, D.D.S.) present. The essayist, Dr. J. W. Wilkes, not being present, a number of interesting case reports were heard and liberally discussed.

Our visitor was then granted the floor, and he gave us much of interest on "Focal Infection," the subject of the day, as the dentist sees it.

A resolution was then made that the society have some extra meetings for the purpose of getting other physicians in the county, who are not members, and a few who are and do not attend the meetings, interested in the good work that it is doing. A committee of three of the members present and three members in the three smaller towns of the county where it was thought best to hold these meetings was then appointed by the President and November set for the date of the first of these meetings. They are not to take the place of our regular monthly meetings, which will still be at the Elks Club, in Columbia, but to be extra meetings in one of the three towns selected, the time and place to be named by the committee, appointed.

M. A. BEASLEY,
Secretary.

RUTHERFORD COUNTY.

The Rutherford County Medical Society met in regular monthly session on October 4 in the Woman's Club rooms.

The President, Dr. J. A. Scott, called the meeting to order.

The essayist, Dr. A. E. Goodloe, read a paper on "Rheumatism," which was freely discussed by Drs. Holmes, White, Kelton, and Jones.

A motion was made and passed that as many as three members volunteer or be appointed by

the President to select and read before the society an article on some important subject, the production from good authority in medical journals, the subject of each to be given the Secretary one week before the next meeting.

A communication was read from Maj. Robert Patterson, of the Medical Corps of the United States Army, who is secretary of the National Committee of Red Cross Medical Service, calling upon this society to name three of its members, in connection with its President and Secretary, making five, to act with and become a part of the Red Cross Service in the United States. The society acted promptly, and three will be appointed by the President as required in the communication.

Present: Drs. Murfree, White, Moon, Allen, Holmes, Kelton, Harris, Goodloe, Scott, Jamison, Huff, Read, Campbell, Wiles, and E. H. Jones (Secretary).

ROBERTSON COUNTY.

The September meeting of the Robertson County Medical Society was held in the chapel of Peoples-Tucker School on Tuesday, September 19, 1916.

The meeting was called to order at 11 A.M. by Vice President Dye and opened with prayer by Rev. L. S. Ewton.

It was a gala day for the society, because it was the day of the annual picnic of the society. The attendance of the membership was good, and the number of visitors was more than at any previous picnic. The number of ladies present added to the attractiveness of the meeting. They had full sway at the dinner hour, and they did their part well. They made several remarks that would do the membership good if they could have heard the questions that they asked about the absent members, and especially those doctors that are not members of the society.

The program for the day was turned over to the visiting doctors, and it is unnecessary to say that they filled it well. We had as visitors Drs. Witt, Shoulders, Bromberg, Nicholl, Ezell, Spain, Dixon, McCabe, Caldwell, Gregory, Davis, and West.

The first paper of the day was a letter from Dr. McDuffee, Manatee, Fla., the first Vice President of the society.

Dr. Caldwell read an interesting paper on "Uterine Prolapse, or Uterine Hernia."

The afternoon session was an open meeting for the public, and Dr. Ezell read a paper on "The Care of the Eyes." The society was next addressed by Dr. Olin West on the same subject, dealing more with the public part of the work. Dr. Cornel then addressed the society and spoke in regard to a resolution that had been adopted and recommended by the County Board of Education in regard to instituting a campaign course of examining the eyes of the children in a few of the larger schools of the county in the way of an experiment. Dr. Witt gave the next address, on "Some Features of History Taking." Dr. Shoulders spoke on "Poliomyelitis." Dr. Nicholl discussed the treatment of poliomyelitis. Dr. Dixon discussed Dr. Witt's paper, and Dr. Gregory discussed the papers of Drs. Shoulders and Witt. Dr. McCabe discussed both papers, and Dr. Caldwell discussed the paper of Dr. Witt.

The day was one that will be remembered by all present. It was an ideal day for a picnic. The presence of so many ladies and other visitors made the day one of pleasure and delight to all in attendance. Barbecue was the principal meat, and it is a pleasure to make the announcement that everybody had enough to eat and to spare, and that nobody was made sick by the eating.

The next picnic will be held on the third Tuesday in September, 1917.

B. F. FYKE,
Secretary-Treasurer.

BOOK REVIEWS

SKIN CANCER. By H. H. Hazen, M.D., Washington, D. C. C. V. Mosby Company, St. Louis.

This is a subject which has long been worthy of an effort directed at it individually and alone. Strange to say, almost all writings on this subject heretofore have had certain chapters or scattering phrases in the book on general surgery or in the whole treatment of dermatology. For this reason the author has been most timely in bringing out just such a book.

Certainly no subject in all medicine at the present age more deserves and actually needs a clear elucidation both for physician and layman. This is what Hazen has striven to do—and has done. His classification appears to be the completest and the best. This is especially true as to the mating of the clinical and the pathological. The classification is further elucidated by a

thorough consideration of all benign neoplastic growths alongside the malignant. This is the most valuable part of the book, since it really brings before the mind in a tangible picture what is actually meant by *precancerous* conditions. This furnishes the key to the education of both doctor and layman for treatment.

The pathology could be more elaborate, but for a book of the kind is entirely sufficient to hold, but not evade, the reader. As to treatment, he sounds the keynote of warnings as to *improper* methods which are so much to be avoided as the proper ones to be administered. He probably values the use of the knife too much above the use of X-rays in all types of cases. The book is certainly practical, well illustrated, and the most useful of its kind. The practitioner, the student, and the layman all need its message. It is the last word on "skin cancer."

HOWARD KING.

INTERNATIONAL CLINICS. Vol. III. Twenty-sixth Series. J. B. Lippincott Company, Philadelphia.

TREATMENT: Gonorrhœa in the Male, Tucker; Treatment of Obesity, Lyon; The Medical Use of High Frequency Currents, De Kroft.

DIAGNOSIS: Clinical Features of Pneumothorax, Hewlett; The Radiographic Demonstration of Spontaneous Pneumothorax, van Zwaluwenburg; Use of the X-Ray in the Diagnosis and Study of Pulmonary Tuberculosis, Miner; Pulmonary Tuberculosis from a Röntgenological Standpoint, Baltjer; Diagnosis of Thoracic Adenitis, Floyd; Hereditary Deforming Chondrodysplasia—A Report of Five Cases in Three Generations, Montgomery; An Analysis of Fifty Cases of Dysthyroidism, Swan.

PEDIATRICS: The Diphtheria Toxin Skin Reaction (Schick Test) and Its Application, Velder.

DERMATOLOGY: Herpes Zoster, Weber; Operative Dermatology, Frescoln.

PSYCHIATRY: The Mental Examination of Negroes, Lind.

SURGERY: Birth Traumatism of the Upper Extremities, Davis; Mixed Tumor (Sarcoma) of the Kidney Removed from Infant Twenty-one Months Old—Recovery, Wood; How to Examine the Rectum and Interpret Its Findings, Drucek; Observations on Cholelithiasis and Cholecystic Surgery, Fort; Anæsthesia from the Point of View of the Instructor and Student, Flagg.

HISTORICAL: Armand Trousseau—A Master Clinician, Garrison.

GRAVES' GYNECOLOGY. By William P. Graves, A.B., M.D., F.A.C.S., Professor Gynecology at Harvard Medical School; Surgeon in Chief to the Free Hospital for Women, Brookline; Consulting Physician to the Boston Lying-In Hospital. Cloth, \$7 net; half morocco, \$8.50 net. W. B. Saunders Company, Philadelphia, 1916.

This most excellent work is divided into three parts: Part I, Physiology and Relationship of Gynecology to the General Organism. Part II, Gynecological Diseases. Part III, Operative Gynecology.

The first two sections, Parts I. and II., comprise over five hundred pages, and are devoted exclusively to nonsurgical gynecology, giving only drug and mechanical treatments. The first section, dealing with the physiology and relationship of gynecology to the general organism, is exceptionally well handled, and covers in a most interesting manner a field in gynecology which is totally neglected in many works on diseases of women. The discussion on the organs of internal secretion (ovary, hypophysis, thyroid, parathyroids, adrenals, pineal gland, thymus, uterus, and placenta), with reference to their relationship to the body as a whole, is distinctly modern, and reflects the best thought along these lines. Part II. deals with general and special inflammatory processes, new growths, defects of development, malpositions of the uterus, injuries due to childbirth, special gynecological diseases, and general symptomatology. Each of these subjects is treated in a full, practical manner, so that material assistance is rendered those seeking a keen insight into the diseases of women. In Part III., devoted to operative gynecology, will be found many subjects often omitted in books on this subject. The technic is modern and complete. This entire section is profusely illustrated with beautiful cuts fully demonstrating the operative field of gynecology. The entire work is strong on differential diagnosis. This is a book which will be found equally valuable to both practitioners and surgeons. We take great pleasure in recommending it most highly, feeling sure it will measure up to the highest expectations.

MEDICAL AND SURGICAL REPORTS OF THE EPISCOPAL HOSPITAL OF PHILADELPHIA. Vol. III. William J. Dornan, Philadelphia, 1915.

This is a compilation of most valuable papers by members of the staff of the Episcopal Hospital, on subjects medical, surgical, and historical, based upon work done in the hospital during the year 1915.

A MANUAL OF OTOTOLOGY. For students and practitioners. By Charles E. Perkins, M.I. Professor in New York University and Bellevue Hospital Medical College. Lee & Febiger, Philadelphia, 1916.

This is a splendidly arranged manual which goes very thoroughly into the discussion of the simple affections of the ear, and which as thoroughly treats of the comparatively few conditions which the aurist must combat by major surgical procedures. The author's style is entertaining, his conclusions are sound, and his technic is the best. This book worthy a place in every physician's library, and will be found helpful indeed.

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SOME SURGICAL CONSIDERATIONS OF GASTRIC AND DUODENAL ULCER.*

BY HOLLAND M. TIGERT, M.D., F.A.C.S.,

Nashville, Tenn.

Within the recent past, surgery of benign lesions of the stomach and duodenum have occupied such a prominent rôle in the limelight of abdominal surgery that it must now be regarded as among the most important procedures in that particular field. The last two decades have witnessed brilliant successes, and oftentimes dismal failures, as modern surgeons have sought to establish the foundation principles for this class of work. While clinical experience and careful observation have slowly evolved certain basic factors, the most cursory perusal of the literature of this subject will convince any one that it is, indeed, far from settled, and that under the most favorable circumstances medical thought cannot crystallize along this line within the immediate future. It may be regarded as definitely proven that these lesions in the vast majority of cases can be perfectly and permanently relieved by surgery, provided properly selected procedures are technically carried out.

In this paper no effort will be made to deal with acute gastric ulcer, the considerations being limited to the chronic callous type, which is by far the commonest variety and the one which requires surgical treatment most frequently.

Prior to 1900 duodenal ulcer was considered less frequent than gastric ulcer; since that time a study of the two conditions has led to a more complete appreciation of the frequency of duo-

denal ulcer, until now, in round numbers, duodenal ulcer is considered to be about three times as frequent as gastric ulcer. Hemorrhage occurs with about the same degree of frequency in both. Gastric ulcer is prone to undergo malignant change, while duodenal ulcer probably never does. The vast majority of gastric ulcers are situated along the lesser curvature, whereas duodenal ulcer usually appears in the first inch and a half of the gut, and more often on the anterior wall than on the posterior. Until more accurate methods of investigation were instituted, many cases of duodenal ulcer were regarded as gastric. Scientific enlightenment resulted from a study of these conditions at the operating table, post-mortem statistics having been misleading and erroneous.

ETIOLOGY.

In a general way, the etiology of gastric and duodenal ulcer is the same. It is not the purpose of this paper to enter into a prolonged discussion of the various theories embracing the causes of these ulcers. Strong advocates can be found for the thrombotic and embolic theory, the mechanical theory, the nerve theory, the bacterial theory, and the erosion theory. It would appear that some form of toxemia or infection is the most probable explanation. Rosenow's recent investigations along this line, while not absolutely conclusive, yet are strongly suggestive. He has demonstrated that certain strains of the streptococci, when inoculated into the blood of experimental animals, produce ulcers of the stomach and duodenum with great uniformity. It appears that these observations should constitute a practical basis for the institution of prophylaxis.

John B. Deaver, of Philadelphia, believes that appendicitis, which is by far the most common

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

intra-abdominal disease, is the most frequent avenue by way of which infection reaches the abdominal circulation; and he assumes that the appendix is responsible for liberating infection, which, in turn, causes gastric and duodenal ulcer in the majority of cases. There is considerable evidence to show that the infection may originate in septic mouths, occasioned by pyorrhea, and in diseased tonsils.

SYMPTOMATOLOGY AND DIAGNOSIS.

In classical cases the symptomatology of duodenal ulcer is so characteristic that Moynihan claims that the diagnosis could be easily made by correspondence. There is a history of intermittent digestive disturbance, usually extending over a period of years. During the intervals the patient may be apparently entirely well. During attacks there is hyperacidity, hypersecretion, hunger pain, and food relief, and, in advanced cases, obstructive symptoms. The typical time for the appearance of pain is from two to four hours after eating. It is one of the most constant symptoms, is often severe, and is described as boring or gnawing in character. Such symptoms as heartburn and belching of gas are often present, but may be entirely absent. Nausea and vomiting are seldom prominent symptoms, except in very advanced and aggravated cases. Unfortunately, all of these cases do not present typical symptoms, and at times the differentiation between gastric and duodenal ulcer becomes exceedingly difficult. Usually the pain in gastric ulcer comes on sooner after taking food than in duodenal ulcer. In gastric ulcer, involving the posterior wall of the stomach in contact with the pancreas, pain in the back may be a marked symptom.

Physical Findings.—While many observers have placed considerable stress upon the presence of occult blood, it appears that this symptom is extremely unreliable, and little store should be laid by it. It is safe to say that no physical finding, in connection with gastric disease, has been so much studied and discussed as the analysis of the stomach contents; and one may assert with considerable certainty that lesions of the duodenum and stomach are not accompanied by any constant state of abnormality in the gastric juice. Friedenwald carefully analyzed the stomach contents from one thousand cases of ulcer of the stomach and duodenum, with the following re-

sults: Gastric ulcers, normal acidity, 46 per cent; hyperacidity, 30 per cent; subacidity, 27 per cent. Duodenal ulcers, normal acidity, 48 per cent; hyperacidity, 35 per cent; subacidity, 5 per cent. Suffice it to say that in the past too much stress has been placed upon chemical analysis of the stomach contents, and that with our present knowledge it ranks as one of the least reliable diagnostic aids. It has some value, but should be regarded as confirmatory only.

X Ray.—The Röntgen ray is rapidly assuming a most important rôle in the diagnostication of gastric and duodenal conditions. The scope of this paper will not admit of an extended discussion along this line. So much has been written upon hyperperistalsis of the stomach and deformities of the cap and bismuth retention in the presence of obstruction, as well as the characteristic niche in röntgenographs of gastric ulcer, that no discussion will be entered into with reference to the same.

With regard to the diagnosis, William J. Mayo says: "The physical examination, including the use of the stomach tube, is important as evidencing hypersecretion and food retention, tumor, visible peristalsis, etc. Laboratory diagnosis—that is, microscopic and chemical examination of gastric contents—has some value, but is largely of a corroborative nature and has been very greatly overestimated."

Dividing diagnostic measures into four groups, the history is of first importance; the Röntgen ray, second; the physical examination (stomach tube, findings, etc.), third; and the laboratory findings, a poor fourth.

DIFFERENTIAL DIAGNOSIS.

At times the differential diagnosis between intragastric and duodenal symptoms and those originating from other intra-abdominal diseases becomes a matter of the very greatest difficulty. However, the differentiation between gastric and duodenal ulcer, chronic infections of the biliary passages, gallstones, and chronic appendicitis is not a matter of such prime importance, since all of these conditions are surgical and can easily be dealt with through a similar incision.

The real problem in connection with cases presenting upper abdominal symptoms is to separate the surgical from the nonsurgical cases. It has been said that the stomach performs the rôle of a mouthpiece for pathology of all the abdomina

organs, and that because the stomach has such a limited range of clinical expression there is a remarkable uniformity of symptoms in vastly different diseases. John B. Deaver classifies the nonsurgical causes of chronic upper-abdominal symptoms under three heads:

First, those dependent upon disturbance of the blood and vascular apparatus, typical examples of this class being gastric symptoms of anæmia or cardiac insufficiency, and, with the latter, enlarged liver, due to passive congestion.

Second, those which are due to toxemia of bacterial, chemical, or metabolic origin. Exemplifying this class may be mentioned renal insufficiency, uræmia, diabetes, chemical toxemia of lead poison, infective intoxications of tuberculosis, the exanthemata, and innumerable bacterial diseases. The origin of stomach symptoms in these cases, being extra gastric, is well known.

Third, those caused by functional or organic disturbances of the innervation of the upper-abdominal viscera, which, after all, constitutes the most perplexing differential problem of all. Under this heading is to be found various neuroses; and, unfortunately, there are times when there are no trustworthy differential points separating the surgical from the nonsurgical. Some years ago neuroses and functional disturbances of the stomach occupied a prominent place in gastric diagnosis; but careful investigation of this class of disorders, with the revelations of the operating table, has rapidly wrought a remarkable change in the attitude of the entire profession toward the existence of this group of stomach disorders. That such conditions exist there can be no doubt; but it is equally true that countless cases of definite pathology in connection with the gall bladder, stomach, duodenum, and appendix have masqueraded for years in this guise.

We should fully recognize the limitations of diagnosis in this region; and, realizing that gastric neuroses are comparatively infrequent, exploratory incision should be done in all cases where persistent symptoms exist, and in such as cannot be definitely proven of nervous origin, as would be indicated by familiar and personal neurotic stigmata. Neurosis of the stomach in an otherwise normal person is an exceedingly doubtful entity.

TREATMENT.

Gastric or duodenal ulcer having been diagnosed, in the absence of serious complication,

medical treatment should be thoroughly tried. No half-hearted measures, however, will avail. The patient should be confined to bed and such measures instituted as have been so strongly advocated by Sippy. The remission in symptoms which is so prominently a part of the clinical picture of both gastric and duodenal ulcer makes it particularly difficult to estimate when medical treatment has been successful.

Efficient medical treatment having failed, or the subsequent return of symptoms in patients apparently cured, renders the case surgical. The advent of serious complications at any time strongly calls for surgery. An earnest trial of thorough medical treatment is not to be construed as indefinite temporizing.

William J. Mayo is rather skeptical as to the value and permanency of medical cures, stating that the majority of cases falling into his hands have had two or three so-called "complete" medical cures; and in such cases operation reveals unhealed ulcer. He says that such patients cannot be looked on as cured unless they can go back, without a recurrence of trouble, to the regular diet of the grade and character obtainable by the average man, and that as a matter of fact, under such circumstances, the symptoms usually recur, and that the dangers of perforation and hemorrhage are ever present.

However, it is only fair to say that many eminent internists take an entirely different view of this matter and claim a large percentage of cures for medical treatment. It would seem fair, all other things being equal, that after a thorough medical trial, symptoms recurring, the case should be regarded as surgical.

Operative treatment having been determined upon, it is not always possible, nor even best, to outline the surgical procedure before opening the abdomen. A complete and careful study of the viscera, while the abdomen is open, is of the utmost importance. In cases where diagnosed gastric and duodenal ulcers do not appear at operation, a most thorough and systematic search for extra gastric causes must be instituted.

It is not the intention of this paper to enter into a discussion of the various surgical procedures instituted for dealing with gastric and duodenal ulcers, since this phase of the subject constitutes an exceedingly large field and is of interest to surgeons only. Gastroenterostomy is by

far the most useful single procedure in dealing with these lesions, and should carry with it a mortality not exceeding two per cent. I would not be understood as regarding gastroenterostomy as a "cure-all."

SUMMARY.

1. Gastric surgery occupies an important place in abdominal surgery. It rests upon a fairly scientific basis; and while this field is pregnant with unsolved problems, in the light of our present knowledge and experience, we can confidently predict complete and permanent relief in the vast majority of cases of gastric and duodenal ulcer where properly selected surgical procedures are instituted.

2. Rosenow's recent epoch-making investigations strongly recommend the importance of prompt and efficient management of all possible foci of infection as a prophylactic measure.

3. Since the profession has been keenly awakened to the prevalency of these lesions and the symptomatology is becoming more generally and perfectly understood, aided by the X ray, a constantly increasing number of these cases should be brought to operation at a time which will save much suffering and markedly decrease the incidence of cancer so far as the stomach is concerned.

In arriving at a diagnosis, the points, in the order of their importance, are:

- (a) History.
- (b) X rays.
- (c) Physical examination, including the stomach-tube findings.
- (d) Laboratory findings.

4. The differential diagnosis between ulcers of the stomach and duodenum, gall-bladder disease, chronic appendix, etc., is not of prime importance, since all are surgical. The real problem is to separate the surgical cases with definite demonstrable pathology from the nonsurgical neurotic cases.

With reasonable care and skill this should be possible in the vast majority of cases. Cases that do not definitely fall into the latter class, and which persistently resist all forms of medical treatment, should have exploratory incision.

5. All cases of gastric and duodenal ulcers not yielding to efficient medical treatment are surgical.

DISCUSSION ON THE PAPER OF DR. TIGERT.

DR. J. H. BARNETT, Chattanooga: I regret very much I did not hear the beginning of Dr. Tigert's paper. It is a subject that is of particular interest to me, and, I believe, one of special interest to every man who is interested in the art of healing at the present time.

Stomach surgery is comparatively new, and it is yet too early to give an absolute tabulation of the results—I mean the end results of surgery of the stomach. There is a great deal to be learned in the treatment, both medical and surgical, as well as in diagnosis. We can find quite a variation of opinion by various authorities as to the procedure after the abdomen is opened, and we can also find great variations in the indications for operation. It is my humble opinion that any patient that has suffered with gastric symptoms as much as ninety days would be far better off to have an X-ray diagnosis made by a competent radiographer.

The essayist spoke of halfway measures in the treatment, and I desire to call attention to the fact that there are no halfway measures in the diagnosis. The first course for the patient to pursue is to swallow about a quart of a mixture of bismuth and oatmeal, or, if you do not use bismuth, some chemical that will give you a shadow in the stomach and the intestines. A mixture of bismuth and buttermilk of a consistency that can be swallowed by drinking will not reveal the action of the stomach, especially the time of emptying. The stomach will empty itself quicker than it would with oatmeal and bismuth.

In the diagnosis the principal thing to watch is the time the stomach begins to empty. If immediately after the meal is given the first picture reveals a shadow in the duodenum, it indicates some irritation of the gastric mucosa, and it is probably at the pyloric end. If at the end of six hours the stomach retains some of the bismuth, it is a retention stomach, and the function of the stomach is deranged in proportion to the amount of bismuth retained. Some of these stomachs will retain oatmeal with bismuth as long as four days.

As to the differential diagnosis between gastric and duodenal ulcer, I think it is of no importance whatever. Where there are large indurated areas it is better to remove the ulcerous area, whether it is in the duodenum or the stomach proper; and if there is more than two-thirds of the duodenum involved, it is much better to do a pylorotomy and remove all of the area that is hard.

The essayist spoke of neuroses of the stomach. I believe there is quite a difference between stomach neuroses and neuroses of the stomach. A great many of these patients that suffer with vague pain in the various parts of the anatomy have had comparatively no gastric distress; they have had a good appetite, and are well nourished to all appearances. X-ray examination will reveal duodenal ulcer, and they will be relieved in a great many instances by a posterior gastroenterostomy. It is not in every instance of a dangerous condition of the stomach that we have dyspeptic symptoms. Recently we had in Chattanooga a man who worked in the morning delivering for one of the fish concerns.

When he went back at noon to take out his horse, he had an acute pain in the stomach, although up to that time he had been able to work. We found he had at no time any gastric disturbance; yet he was seized with a severe abdominal pain in the afternoon, and in the evening we outlined over the epigastrium an area that was more rigid, and an exploratory incision revealed a perforating gastric ulcer. A diagnosis of acute indigestion, followed by death and accompanied by hematemesis, in my opinion, is frequently an erosion in the stomach of an ulcer that has broken down a blood vessel or has perforated. The years to come will show that there is as much cause for exploratory incision in the upper abdomen as there is in the lower.

DR. TOM A. WILLIAMS, Washington, D. C.: I should like to say a word or two on this subject, inasmuch as the speakers have referred to the difficulty of diagnosis in dealing with a neurotic individual. Of course a neurotic individual may have a gastric ulcer, and the mere fact that this individual details a lot of imaginary symptoms and lays stress upon diseases he may think he has does not prove he has not organic disease as well. Putting that aside, let us recall what Dr. William J. Mayo said in 1910 in Washington. At that time he remarked that he wished somebody would teach him how to deal with the large number of patients sent to him by neurologists, for he had found in many instances these patients were made much worse whether an exploratory operation was done or not. (See Surg., Gynecol., and Obstet., 1909, "Visceral Pain and Psychotherapy.")

I want to say a word or two about some of these patients, so that they can be excluded from consideration, provided certain tests—such as the use of the X ray, the leucocyte count, careful temperature observations, and a clear history—are negative. These patients are of three kinds.

The first type of patient that comes to us is the tabetic—a man with early locomotor ataxia, with gastric symptoms only. A proper neurological examination of such a case should always detect the signs of latent syphilis in the patient and lead to the proper treatment.

The second class is the true neuroses, due to perversion in innervation of the vegetative nervous system, either the syndrome of vagotonia or its converse, the sympathetic syndrome, which we do not thoroughly understand yet. Sometimes the two conditions are mixed. We believe they have to do often with perversion of the internal secretions; sometimes they have to do with other conditions; but we do not know whether or not the symptoms are caused by abdominal lesions. However, the pure syndrome of either vagotonia or of sympathetic tonia is very easily detected by appropriate tests. When a patient is suffering from vagotonia, he has marked gastric symptoms always, such as will lead one to suppose that there is some obstruction which may be functional and which should be easily detected by proper tests. I cannot say the same of mixed cases yet, because experience is still lacking.

A third type which gives rise to a great deal of anxiety, which is no *neurosis* at all, is the imaginary stomach, what we call "hysterical," with a phobia against

eating, with a fixed idea that the stomach is not functioning properly, and a reference of all of his discomfort to his stomach. He may have hypotonia of the stomach; he may be a feeble person, with poor digestion added to the feebleness; but if there is undernutrition, fear and anxiety do not induce good nutrition. These patients are cured easily by proper feeding and, above all, by proper psychotherapeutic reclaiming. That these patients are sometimes operated upon we have reason—alas!—to know. To show the gravity a voluntary starvation may attain, only week before last at Washington a poor girl fell into a coma, an actual acidosis coma, from starvation; and only then a new doctor, who had been studying acidosis, came to the conclusion that her trouble was due to starvation, and began to feed her, when she completely recovered. She had been having symptoms for four years. That was a case of false gastropathy, a phobia of eating, with ensuing acidosis.

There are many cases that escape acidosis who do not eat enough to keep themselves well, who need differential diagnosis instead of subjection to operation. (See "Nervous Dyspepsia," American Medicine, 1909.)

I am glad to have heard this paper on surgical diagnosis of gastric and duodenal ulcer, and that the author prompted certain neurological considerations which are very important in the obscure and difficult cases. (See also "Management of Psychoneurotic Patients," Cleveland Academy of Medicine, reprints from the author.)

DR. J. B. THIELEN, Knoxville: I have enjoyed this paper very much; and after listening to Dr. Barnett's discussion, I wish to say, in the first place, that we, as practitioners, ought to be able to make a differential diagnosis in cases of gastric and duodenal ulcer. The diagnosis of gastric or duodenal ulcer in the majority of cases may be considered easy; but there is a small proportion of cases, however, largely latent, that are rather difficult to diagnose. Often after taking the history and making a physical examination and considering the clinical symptoms, the X-ray and fluoroscopic findings, we may be at sea. I have at present a case in mind. A man came to me about a month ago giving a history of having had digestive disturbances for the last two years. There was nothing typical of gastric or duodenal ulcer. The clinical symptoms were not those of duodenal ulcer. After making a laboratory examination, I found the man had occult blood. I did not stop with this, but I made the Einhorn string test. I found blood on the string. I had a skiagraph made. This patient had first been to another physician, who is a competent internal medicine man, and he sent him to an X-ray man. The X-ray man had given him a month's treatment, but had failed to make an X-ray examination. An X-ray examination of the duodenum showed there were incisures and indentures; and when the cap of the duodenum shows indenture, you are pretty safe in concluding you have duodenal ulcer. Had I gone by the clinical symptoms or by the history, I would have failed to make a diagnosis. The past history and clinical symptoms are the most important in any case in making the diagnosis. We do meet with latent ulcers from the past history that is given us by the pa-

tient, and the clinical symptoms sometimes will not lead us to suspect that the patient has a duodenal ulcer.

I have heard two or three papers to-day, one particularly on surgery of gall-bladder disease and the prophylactic treatment, and I thoroughly believe that if we had more good internal medicine men we would have less need of our mature surgeons. I believe there is a field for all good surgeons. I believe if the internal medicine men did their duty and diagnosed their cases and exhausted every method in making a diagnosis, we would have less surgery, simply because we would treat these cases properly and they would not become surgical cases. A great many cases of duodenal or gastric ulcer are primarily due, no doubt, to chronic appendicitis, as many of them are associated with chronic appendicitis. The probabilities are that it is due to the same infective microorganism as chronic appendicitis. I do not lay much stress on the laboratory findings as to whether I have a hyperacidity or hypacidity, or no acid, or achylia in gastric ulcer.

I read a very interesting article in the May issue of the *Journal of the American Medical Association*, by Dr. Sippy, advocating the alkaline treatment of gastric ulcer—that is, particularly in acute gastric ulcer, for most of the patients with acute ulcers have a hyperacidity. Most of the chronic gastric ulcers are associated with chronic gastritis and have a low acidity, and some of them are without any acidity at all. To give food every two hours with sodium bicarbonate, magnesium, or subcarbonate of bismuth, to keep the stomach contents alkaline in a case of chronic gastric ulcer, is useless. These cases are already alkaline and fail to heal. The longer the ulcer exists, the less tendency there is to healing. When an ulcer has existed from two to three or four years, it is as much a surgical case as any gall-bladder case or any chronic appendiceal case. I do not believe any of us can tell positively when a chronic ulcer with induration ever heals. We may ameliorate the symptoms by proper diet and by proper medicinal treatment, but I have often compared a case of chronic gastric ulcer with a chronic indurated old shin ulcer. We all know in a shin ulcer we can put the leg to rest; we can treat the ulcer locally and the patient constitutionally; but until we have incised and split open the indurated tissue, the circulation does not get to the base of the ulcer, and we do not get a normal healthy blood supply to the ulcer; and, therefore, the ulcer does not heal. I believe the same holds true with reference to chronic gastric ulcer.

DR. C. J. CARMICHAEL, Knoxville: I want to ask Dr. Tigert a question. In his summary he stated that gastroenterostomy was a most successful or the most commonly used operation for the relief of these cases, and that it is the most approved single surgical procedure. I would like to know why that is, and what guarantee have we that the ulcer has completely healed afterwards, and if it has not been repeatedly stated and well established that many of our carcinomas develop at the site of old healed ulcers, and why is gastroenterostomy a good piece of surgery instead of excision.

DR. H. M. TIGERT, Nashville (closing): I am very grateful to the association for the very free discussion

of this subject, and I am particularly glad that the reading of Dr. Witt's paper preceded mine. The two papers might very fittingly be considered together.

The object I had in presenting this subject was to call attention to the fact that many cases now being treated for chronic indigestion by various unsatisfactory methods should be carefully and thoroughly worked out along the line indicated in Dr. Witt's paper, which would lead to positive diagnoses of definite intra-abdominal conditions readily susceptible to cure by surgery. Among these conditions are gastric and duodenal ulcer. Gastric and duodenal ulcer is undoubtedly extremely prevalent—much more so than one might imagine. I have no doubt that there are numerous cases under the care of members of this organization that have not yet been suspected. I think we should more fully realize the importance of this field and make thorough investigation of cases of so-called "chronic indigestion."

In cases not definitely neurotic, exploratory incision is justified. I believe clinical experience will demonstrate that the vast majority of these cases have pathology which, if corrected, will relieve them.

Dr. Barnett laid great stress on the X ray. This is important, but I believe the diagnostic point of the greatest importance is the history; and if one will carefully look to this, a diagnosis can be made in many cases from the history alone. However, I do not advocate any one diagnostic measure to the exclusion of all others. A history hurriedly taken will oftentimes not only be incorrect, but misleading. It not infrequently requires numerous conversations to elicit all the points of value in a given case.

The preoperative differentiation between gastric and duodenal ulcer is not of prime importance; but the pathology should be carefully studied at operation, and the surgical procedure governed accordingly.

Gastric ulcer is prone to undergo malignant change; duodenal ulcer rarely, if ever, does. The possibility of ultimate cancer in gastric ulcer makes surgery imperative. Perforation and hemorrhage are the most dreaded complications of duodenal ulcer.

Some one referred to cases which were made worse by operation. These can be explained on two grounds—first, ill-advised operations; second, faulty technic. No operative procedure should be carried out except in the presence of demonstrable pathology. Within the recent past, surgeons not uncommonly performed gastroenterostomy, based upon the history and clinical symptoms and in the absence of definite pathology at the operating table. If these cases were more carefully worked out, a large percentage of them would show that the symptoms were referable to chronic appendicitis, gallstones, chronically infected gall bladder, chronic pancreatitis, etc.

The differential diagnosis between indurated ulcer and carcinoma at operation is of considerable importance. Usually there is more oedema in ulcer, greater immobility, and, as a rule, the adhesions are much denser. In the presence of cancer, small islands of carcinomatous tissue may be seen beneath the contiguous peritoneum.

Dr. Carmichael asked what gastroenterostomy does. In properly selected cases it cures the patient. I think it makes very little difference how it does it. There are two or three theories bearing on this point. However, it is of little importance which one is correct. Some have said it is drainage. I do not know whether it is drainage or not. Certainly in some cases drainage contributes to the cure. Others say it is the result of turning the alkaline intestinal juice, pancreatic fluid, and, to some extent, perhaps the bile, into the acid stomach. Whether the erosion theory is correct or not, these ulcers are benefited by gastroenterostomy. I do not advocate gastroenterostomy alone. There are other operations that ought to be substituted for gastroenterostomy in properly selected cases.

SOME OBSERVATIONS OF THE TREATMENT OF FRACTURES, WITH SPECIAL REFERENCE TO THE INDICATION FOR OPEN OPERATION.

BY E. A. SAYERS, M.D.,
Nashville, Tenn.

W. B. Coley, of New York, in a special address before the Southern Surgical and Gynecological Association, says: "The pendulum has swung too far in the direction of the open operation in the treatment of fractures." This statement certainly coincides with my own personal experience. Much has been said and written concerning the operative and nonoperative treatment of fractures. Still, when all has been said and done, the same chaotic state exists, and still we look hopefully about us for some one to advance a safe and sane rationale concerning this treatment. I do not claim any original ideas, but I trust that when this paper has been completed we will be able to realize a few of the practical facts that have been demonstrated and are known to be true without a shadow of a doubt. These facts are the culmination of the operative and nonoperative treatment of fractures that I have performed during the last two years.

What do we mean by the operative treatment of fractures, and under what conditions is it indicated? By "the operative treatment of fracture" we mean the exposure of the seat of fracture by an incision—its reduction if necessary, and to maintain the apposition of its fragments by the application of various appliances designed for that purpose. The broad indication for the

open operation in the treatment of fractures, in the absence of great damage to blood vessels and nerves, is the inability to bring the fragments into such apposition as is necessary to obtain good functional results. It is a fundamental fact, accepted by all doing fracture work, that a good anatomic reduction and fixation of the fragments is essential in order to obtain these results. However, this does not mean that one should rush in with the operative plan of treatment too early, for conservative methods must be given a fair trial in most instances, and will probably succeed in ninety per cent of the cases. Campiche, in the *American Medical Journal*, says that open operation on recent closed fractures is absolutely unnecessary in most cases, and must be reserved for really irreducible fractures. Still, there are certain conditions that must be removed before these results are obtained by the conservative plan of treatment; and in numerous cases the knife and our old friend, the Lane plate, would still be lying rusty on the shelf.

Let us bear these most important obstacles prominently in our minds, for they are far too often forgotten and overlooked. I am sure if every one of you here would but only recall some of your cases treated by the operative plan, you would bear out my statement that, had these obstacles first been removed, the open operation would have been unnecessary. The most prominent of these conditions are:

First. The interposition of soft structure between the ends of the fragments.

Second. Overriding and too much separation of the fragments for the proper callous formation to take place.

This may best be determined by radiographs made in at least two planes. Of course included in this is the proper immobilization of the fragments after they have been properly approximated. The general condition of the patient plays a most important rôle, and it is of paramount value to see that the diet of such patient is favorable to that of callous formation.

Surely you have all had cases in which no union had taken place after waiting the usual length of time; and only then did you investigate the general condition of the patient, only to find that your poor results were due to the fact that the patient was suffering from syphilis, nephritis, diabetes, or possibly other maladies of like nature. Let us not wait until our splints or casts



Radiograph No. 1 shows fracture at time of injury.

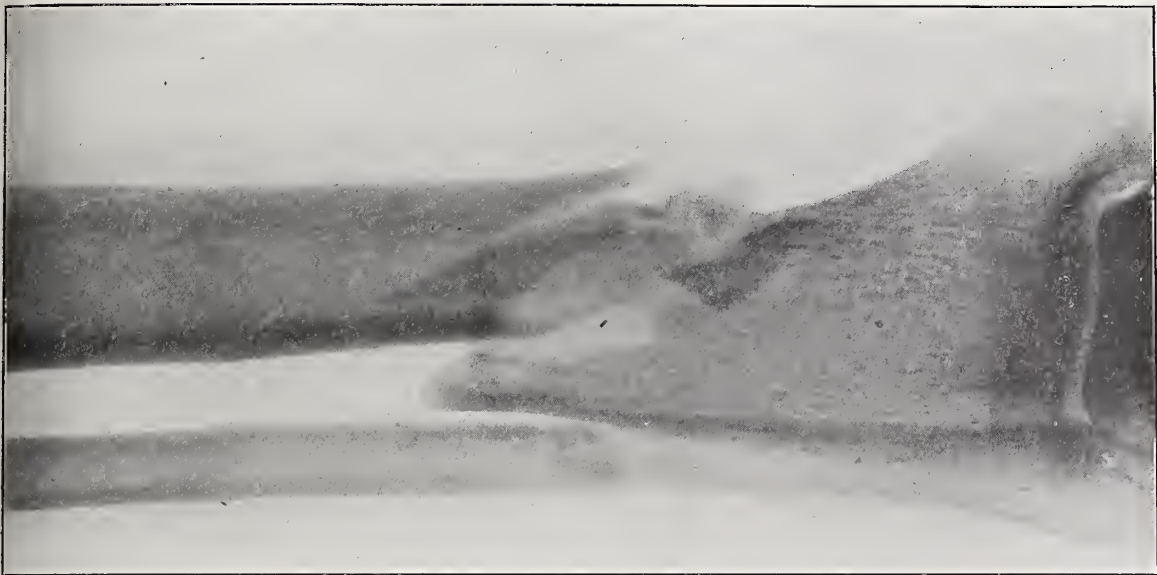
are removed, and possibly find a bad result from such causes; but let us be more alert, and investigate for these conditions at the time of injury.

It is a common observation to find in ununited fractures a marked or an entire cessation of osteogenetic activity. The therapeutic requirement of these pseudoarthroses are fixation and stimulation of osteogenesis on the part of the fragments. How can this be accomplished? In fractures of the lower extremity we have, to a great degree, accomplished this by the ambula-

tory method of treatment. In this type of cases, with good or even fair apposition of the fragments and in the absence of a constitutional disease, even with a small amount of soft structure interposed between the fragments, good results have been obtained by the above method. In this connection I think it most fitting and proper to read the history and results, as well as demonstrate radiographs, showing the vast amount of callous that has been thrown out by this plan of treatment, previous to which, and after wait-



Radiograph No. 2 shows fracture result, after ambulatory method of treatment.



Radiograph No. 1 shows fracture at time of injury.

ing the usual length of time, no union had taken place.

Case No. 1: S. M., colored.—Injured, May 17, 1915. Taken to City Hospital and radiograph made, which showed oblique fracture of both bones of left leg at the juncture of middle and upper third. Fracture was reduced and leg placed in fracture box and Buck's extension apparatus applied. May 26, 1915: Plaster cast, extending from knee to and including foot, applied and patient sent home. June 30, 1915: Cast was

removed, with union in fibula, but no union in tibia. June 30, 1915: Light cast reapplied and treated ambulatory method. August 10, 1915: Cast removed, with bony union in tibia. Demonstrate radiographs.

Case No. 2: W. W., colored.—Age, 49 years. Family history negative. Physical examination negative. Injured, April 24, 1915. Taken to Nashville City Hospital. Radiographs showed comminuted fracture of both bones in both legs at the junction of middle and lower third; also



Radiograph No. 2 shows fracture result, after ambulatory method of treatment.

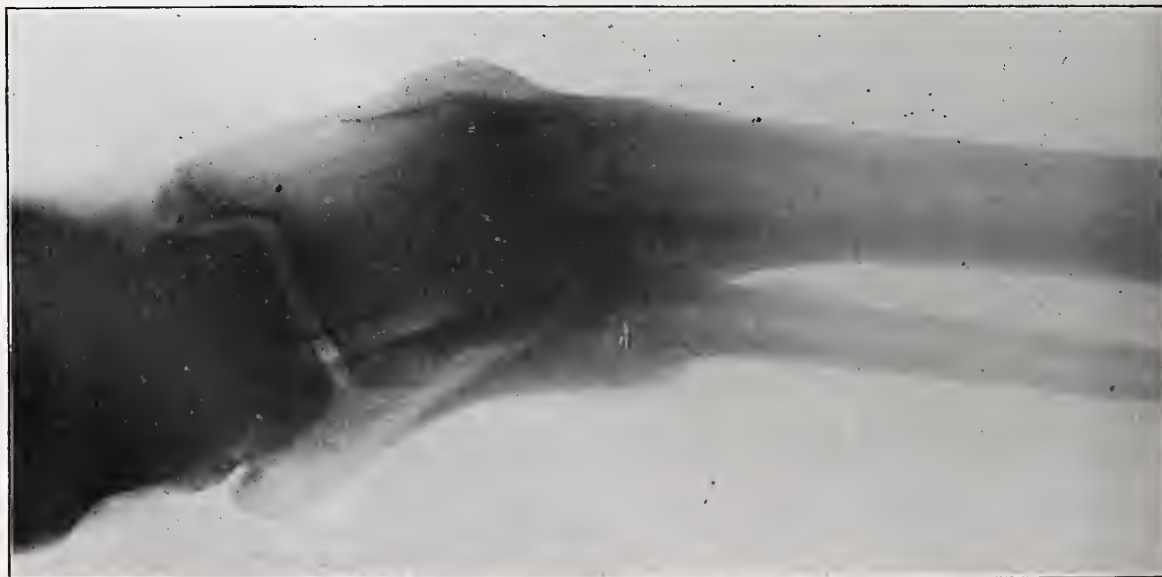


Radiograph No. 1 shows fracture at time of injury.

there was a wound communicating with seat of fracture over both tibias. Fractures were reduced, wounds in soft structure iodined, and gauze dressing applied. Both legs were placed in a fracture box. May 3, 1915: Wounds in soft structure healed without infection. Splints removed and plaster-of-Paris dressing, extending from knee to and including foot, applied to both legs. June 7, 1915: Plaster casts removed, with bony union in both bones of right leg and fibula of left leg; no union in tibia. Injured was

again carefully examined for syphilis, nephritis, diabetes, etc., but with negative results. June 8, 1915: Plaster casts reapplied to left leg. Patient treated by ambulatory method. July 15, 1915: Cast removed, with bony union in tibia. Demonstrate radiograph.

Case No. 3: B. H. R., white, male.—Age, 42. Injured, December 18, 1914. Taken to St. Thomas Hospital. Radiograph made, which showed fracture of tibia and fibula just above ankle joint, with wound communicating with



Radiograph No. 2 shows fracture result, after ambulatory method.



Radiograph No. 1 shows oblique fracture of humerus, with much separation of fragments. Fracture just below insertion of deltoid muscle.

seat of fracture in tibia. Fracture reduced and placed in double incline plane splint. December 30, 1914: Wound in soft structure healed without infection and leg placed in plaster-of-Paris cast and patient sent home. February 8, 1915: Cast removed, with no union in tibia or fibula. February 9, 1915: Cast reapplied and injured treated by ambulatory method. April 1, 1915: Cast removed, with good union in both bones. Returned to his work April 15. Demonstrate radiograph.

These are just illustrative cases showing what may be accomplished by this method of treatment. Then, why not give them this opportunity before subjecting them to open operation, with its chances of infection and possible permanent disability?

There are fractures, however, in which the open operation is indicated and absolutely necessary in order to obtain good functional results—viz., fracture of the patella, with wide separation of fragments; fracture of the olecranon, with



Radiograph No. 2 shows same fracture as No. 1 after open operation, reduction, and fixation with phospho-bronze wire.



Radiograph No. 1 shows fracture of patella, with wide separation of fragments.

wide separation of fragments; fracture of the head of the radius, with a displacement of the fragments; fracture of the shaft of long bones, with much soft structure interposed between the fragments; fracture of the tarsal and carpal bones, with wide separation of the fragments; fracture of the surgical neck of femur and humerus; condyles and tuberosities of the various bones; oblique fractures of the long bones and clavicle, with separation and overriding, making reduction impossible; where there is a division

or compression of any nerve; where infection has occurred in the region of the fracture; all cases of nonunion. A case illustrative of this type is as follows:

C. M. H., white, male.—Age, 62 years. Family history negative. Physical examination negative. Injured, June 13, 1914. Sent to Nashville City Hospital. Upon examination, I found comminuted fracture of patella, compound comminuted fracture of fibula, and oblique fracture of tibia upper third. Under ether anaesthesia,



Radiograph No. 2 shows same fracture after open operation and reduction. Bone encircled with kangaroo tendon.

lacerated tissue around seat of fracture in fibula was removed, wound iodined, and gauze dressing applied. Fractures were reduced and leg placed in fracture box and Buck's extension apparatus applied. July 10, 1914: Wound in soft structure healed without infection. Splints removed and leg placed in plaster cast, extending from knee to and including foot, and patient sent to his home. August 23, 1914: Cast removed, with union in fibula; no union in tibia. August 24, 1914: Removed to hospital and seat of fracture over tibia exposed through incision. Much soft structure was found interposed between ends of fragments; also fibrous union was present. Interposed soft structure was removed, ends of fragments were freshened with chisel and curette, and small Lane plate applied. October 1, 1914: Lane plate removed on account of infection, ends of fragments again freshened, and intramedullary bone peg inserted according to the Murphy method. Light cast applied. November 10, 1914: Wound healed without infection, cast removed, and steel brace, extending from below knee to heel of shoe, applied, and patient instructed to begin use of leg.

After we have decided upon our type of fracture and conclude that open operation is necessary, the next question that arises is the time in which to operate. Lambotte varies the time of operation with the extremity involved—upper extremity, sixth to tenth day; lower extremity, tenth to fifteenth day. When the cases are seen in time, we, as a rule, do not wait longer than the tenth day. Why? By this time much of the exudate in the region of the fracture has been absorbed; at this time the bone and periosteum have begun to show signs of new life; at this time the lymph spaces are cofferdammed against infection; by this time you can say definitely whether or not the other methods of reduction have accomplished the desired result; and, last, but not least, fibrous union has not had time to develop. Most writers claim that fibrous union of the long bone is a rarity. This, however, does not coincide with my own experience; for I should say that in at least ninety per cent of such cases in which open operation was done after the third or fourth week following date of fracture, fibrous union was found.

The next question that presents itself after our seat of fracture has been exposed and fracture properly reduced is the best method of fixation.

Much has been said and written concerning the use of the Lane plate in the fixation of fractures. Lane himself makes the statement that he has never, under any circumstances, had to remove any of his plates after they were properly placed on the bone; but, like all men who concentrate on and advocate one certain procedure, he falls into the narrow and shallow groove and makes some statements that do not fall short of fanaticism. No doubt at an earlier date the Lane plate in a few instances was of some value; but good men on all sides and from every district alike quote the failure, as well as the complications that arise from these foreign materials; and I will state here that my results have been in keeping with the experience of other men who have used these plates. For a while it seemed as though we were getting good results; our wounds healed nicely; no infection of the skin and soft structure; and at the time of congratulating ourselves upon good results we were surprised to find that these foreign bodies had set up an inflammatory process, with discharge of purulent material through a sinus that had been formed because of its presence; and this inflammatory process increased from day to day, making it necessary to remove the plate in question; and I will state that of the five cases in which we used these plates, with the exception of the one used on the clavicle, our results were always the same, causing us considerable annoyance, and with the final result that they all had to be removed. We all know that bone is just as intolerable to foreign bodies as the soft structure. It is true that bullets and other small substances may remain indefinitely buried in the muscle and other soft structure without producing infection; the same is sometimes true of metal plates, with their screws abiding peacefully on and in human bones for long periods, perhaps indefinitely; but such instances are the exception rather than the rule. In fact, I wish to condemn the practice of placing any foreign body in a bone if it can possibly be avoided. However, there are a few types of fractures that I will mention later that are, as a rule, fixed with screws and staples, and possibly better by the use of bone and ivory pegs, which stand some chance of being absorbed. There are some foreign substances, however, that are very valuable and useful to us—viz., phosphor-bronze wire—in the fixation of fractures of the patella and oblique fractures of long bones.

However, we never go through the bone substance, but around the bone. In oblique fractures the wire should be placed at a right angle to the line of fracture. In fractures at the neck of the femur, condyles, and tuberosities of various bones, the olecranon, with wide separation of fragments, Y-shaped fractures of the upper end of the tibia—these may be fixed with screws and staples, or, possibly better, with bone and ivory pegs. In ununited simple fractures of the arm and forearm, in which the osteogenetic activity has ceased, the best method of treatment is the intramedullary bone splint and transplant. In cases of fracture of long bones, in which you have much bony destruction, resulting in a gap between bony fragments, which, if approximated, would result in great shortening, the above method is quite applicable.

CONCLUSION.

1. Radiographs should be made in at least two planes to determine the type of fracture and position of the fragments. This alone, as a rule, determines what course is best to pursue.

2. In fracture of the lower extremity, in which union has not taken place in the ordinary period of time allowed for such fractures, the ambulatory method of treatment should be given fair trial before resorting to open operation.

3. Open operations as they are done to-day, indiscriminately and by inexperienced operators, are responsible for the high per cent of bad results.

4. Open operations should not be done until conservative methods have failed, unless absolutely indicated and necessary, primarily, in order to obtain good functional results. This should not be difficult for a man who has had experience in treating fractures to determine.

5. Open operation should not be done within ten days after date of fracture.

6. If open operation is indicated, asepsis, in the highest degree, should be our aim; for infection or no infection, as a rule, determines our results.

Your local society will choose its 1917 officers next month and consider plans for the work of the year. Be on hand, pay your dues, and help do what ought to be done. Be a "live one" in your society!

"KNOWLEDGE COMES, BUT WISDOM LINGERS."

—
BY A DOCTOR'S WIFE.
—

"If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages princes' palaces." So said the lady Portia to her maid, Nerissa, three hundred years ago; and yet the poor old world has been lagging on ever since, knowing what it were wise and good to do in many instances, and yet seldom having the ability to adapt its knowledge to the needs of humanity.

Especially in regard to the theory and practice of medicine to-day is there a wide discrepancy between knowledge of what is needed for the welfare of the human race and the courage and wisdom necessary to apply the new learning to the needs of our own day and generation.

We have men of genius and ability set apart in laboratories and halls of science for purposes of investigation and research, delving ever deeper and deeper into the mysteries of life and death, with a view to the final propagation of their discoveries for the benefit of all mankind. And we have in the rank and file of the profession many men who devote a large part of their time to study and experimental knowledge of disease. The busy city doctor, if he is a man consecrated to the ideals of his profession, is apt to be far more interested in some hospital clinic that involves scientific problems than he is in the headache or stomachache of some rich private patient who is paying the simple and well-established penalty for over-eating and under exercising. The country doctor, cut off from the advantages of hospital clinics and laboratory tests, has at least the compensation of leisure to read and digest the enormous amount of medical literature at his command to-day. The long rides in the open air, that he takes in going from patient to patient, are conducive to good, clear, and healthy thinking, and what he lacks in facility for consultation with other doctors is atoned for in the necessity which throws him back upon his own independent judgment and diagnosis.

If there is a discrepancy between the knowl-

edge of truth and its application to the treatment of disease to-day, we surely cannot attribute it to lack of technical learning on the part of the average medical practitioner in our midst. For his knowledge of what it were wise to do is usually far beyond his courage to enforce his admonitions or his ability to set the seal of example upon his own precepts. Of scholars and thinkers and experimental investigators our age seems to have enough, and almost to spare; but what we seem to lack are "soldiers," who, like the angels of the Lord under the old Hebrew dispensation, will not hesitate to raise the flaming sword of warning before the misled and wandering hosts of Israel.

The people need heroic leaders as well as able teachers. What behooves it that every day and hour are prolific of fresh discoveries and scientific advance, when large numbers of the victims of disease still cling tenaciously to the false gods and fetishes, the superstitions and traditions, the poisonous drugs and potions of the unenlightened past? Of what value are the pearls of knowledge, the best achievements of the best scientific investigations to-day, to a people who still regard medicines as a "black art" and who still fall ready and easy victims to the spurious gifts of the subtle and benevolent quacks, the specious frauds and professional crooks of the hour. For, strange to say, the "general public" seems to be more discerning on almost any other subject concerning its salvation than on the question of health.

I know of a druggist in another State who for years shipped barrels of alum to a watering place which fashionable people frequented on account of the medicinal value of the springs. And I have known women of more than average intelligence to reckon among their treasures little cotton handkerchiefs which some so-called "healer" had endowed with power to cure malignant disorders, as well as ordinary pains and ailments. If family physicians asserted their authority, the little cotton rags would be discarded, beyond any shadow of doubt. When doctors require compliance with certain logical and common-sense conditions on the part of the patient, then, and not till then, will high standards be established.

We have unlimited respect for the real dig-

nity and high ethical standards of the medical and surgical professions, and realize that it is in conformity with the highest sense of honor that the regular physician does not stoop to parley and argue with the quack doctor or his misguided victim. But if there ever is a time when patience ceases to be a virtue and becomes a crime, it is when we let our own sense of personal dignity and reserve hold us aloof from interference between the medical crook and his weak but unhappy victim. Of all depraved creatures, the man who deliberately preys upon the physical disability of his fellow-man is the lowest in the social scale, and it is very distasteful to a man of high ideals to take up the cudgels against such a one. But there are times when interference between such objectionable fellows and their victims is demanded by the most primitive and time-established laws of conduct and life. And unless the up-to-date and scholarly physician of to-day is willing to lay aside his personal dignity and professional supersensitiveness and do battle for the great truths and revelations he has been intrusted with, of small avail to the benefit of mankind will be the scientific discoveries and investigations of our age.

When Moses was on Mount Sinai communing with God and receiving his commandment, looking toward the highest spiritual development of the children of Israel, somebody in authority below was very remiss in his duty in guarding the people from falling back into the ignorance and idolatry of the Egyptians. Moses realized at once the utter futility of imparting the higher truths he was about to deliver to people lacking the rudimentary conviction of truth. In token of his despair he destroyed the tables of the law with a crash that resounded through Israel and awoke many to a sense of their danger and disorder.

In vain is all the learning and consecration of the "new dispensation" in matters of health if men cannot be led away from their old allegiance to the "black arts" and idolatry of the unenlightened ages of earth. For instance: Can we honestly claim that our application of recently discovered scientific truth is at all commensurate with our indebtedness to the opportunities of our age in regard to the great mass of contagious diseases?

Consider the question of tuberculosis, one of our most common parasitic diseases. Since the discovery by Koch in 1882 of the organism producing the disease the diagnosis of tuberculosis has been facilitated. The measures necessary to prevent its spread are now quite universally understood and successful treatment in early stages comparatively effective. And yet the steps actually taken in any community for efficiently stamping out this terrible plague are singularly weak and insufficient. Provision is made for but few of those afflicted in almost any community, and the best mass of those infected are allowed to go on pursuing the ordinary avocations of life, making bread, bottling milk, dispensing mineral waters, teaching school, handling dry goods, compounding medicines, delivering groceries, milking cows, making candy, knitting hose, handling money, washing sheets and pillow slips, handkerchiefs and table linen. *Knowledge* has come to us indeed in regard to tuberculosis, but verily *wisdom* in applying our knowledge is certainly "lingering and lagging."

A trained nurse of my acquaintance who does settlement work in a factory district of our town was detailing to us some of the handicaps in her work and made mention of the following incident: On locating a case of tuberculosis in a large and poverty-stricken family in her neighborhood, she succeeded in securing the removal of the patient (a young man) to the Tuberculosis Hospital. After two weeks' absence, the young man returned home. Inquiry elicited the fact that he refused to stay anywhere where people were so unkind as to compel a patient to change his underwear twice a week. No amount of argument could alter his determination to remain at home, where a large family will now probably fall victims to his contagion. Nor is this all. Every morning this young man hies himself to a nearby park, a playground, set apart by the city to afford a breath of fresh air to the children of the factory district. The gentleman who does not care to change his linen but once a week is quite extravagant in regard to the expectoration of sputum, and, as he always chooses the most frequented benches and the environment of the popular swings,

he is sowing a rich harvest of disease germs "for reaping by and by."

Now consider the utter futility of putting a trained nurse in such surroundings and then equipping her with absolutely no authority or redress in cases of such utter violation of all law and order. Consider, again, what a tremendous asset an army of trained nurses (women consecrated to their work as so many of them are) would constitute if the State should equip them with authority and send them into infected communities to enforce compliance with sanitary regulations. Many patients could be treated and supervised in their own homes, others sent to segregated camps under official control and allowed more latitude than is possible in hospitals or city sanitariums.

Scarlet fever and diphtheria are extremely contagious diseases, but with proper precautionary measures their spread can be controlled. And yet the doctor and health officer have a hand-to-hand fight every time they attempt to curtail the liberty of individuals in an effort to stamp out embryo epidemics. O for that famous sword of the angel of the Lord, before referred to! O for tables of stone to crash down from the slopes of Sinai and make a whole people awake and learn the things that concern their salvation!

Flexner's serum is one of the greatest gifts of modern science to suffering humanity; and yet what behooves it to the crowded factory community where an ignorant doctor stands jealous guard over his rightful prey and defies the efforts of the King's Daughters' special nurse who dares to interfere with her "new-fangled notions," as he terms them. And if the trained nurse is not allowed to interfere and the regular practitioner refuses to interfere, what is to become of the general public in the face of that universal law of contagion that binds the rich man's nursery to the poor man's slum?

Like the guilty man of old, we might ask, when we desire to shirk responsibility for his condition: "Am I my brother's keeper?" But to-day our knowledge of contagion is all too definite to allow us to ask innocently: "What concern is it of mine that the poor man puts himself in the hands of ignorant doctors?"

For we know only too well what concern of ours it is, and are only too well aware of the fact that the disease we permit to flourish and run rampant in our city slums will eventually have to be reckoned with in our own neighborhood, and yet we wait until the consequences reach our own doorposts before we rouse to action. Compare our laxness in dealing with contagion with our preparedness in case of fire. If a negro shanty is in flames, we rush engines and men to the scene, interrupt traffic, and make vast demands on the municipal purse and water supply, in face of what we know to be a common danger. But even though a house in a crowded tenement district be seething with infection, a menace alike to those within and those without, whose business is it to interfere? If a "self-styled doctor" allows diphtheria to flourish in "Tincup Alley" or "Poverty Row," and refuses to placard the houses until it is too late to avoid wholesale disaster, who apprehends the malefactor or rings the town bell in warning of a common calamity? Yet the mothers of those suffocating children make the overalls your little boys wear, and their fathers, perhaps, press the very trousers your sons look so immaculate in. And just so long as such contagion flourishes; just so long as bad housing, bad drainage, bad water supply, and other injustices and economic evils (including the fake doctor) are permitted to exist—just so long must we hesitate to boast of the medical achievements of our age.

Wonderful work has been done along these practical lines. We have hospital service, public clinics, public-school physicians, district nurses, and all sorts of philanthropic enterprises in our midst, but so much remains to be accomplished before definite results are achieved that we dare not stop to boast of our progress.

And not only as to the question of the service to the poor and ignorant must the modern, up-to-date doctor of medicine concern himself; in his private practice he comes in contact with people of means who need his kind administrations and sober judgment and admonition just as much as do the wards of the city dispensaries and hospital cots.

How about the sons and daughters of the rich, suffering from the strain of the artificial

life of smart social circles, never stopping the pace until it is too late to expect ordinary methods of rest and recuperation to avail, and at least hoping to combine pleasure and profit by flocking to the fashionable watering places or patronizing dispensers of medical fads and fancies? How about the man of wealth who has squandered health in search for riches and now wants to buy back with filthy lucre the birthright he has forfeited? How about the ambitious mother who has burned the candle at both ends and worked miracles to put her sons through college and her daughters through society, and who comes now with deranged nervous system and her mental equilibrium, like a "sweet bell, jangled and all out of tune," to throw herself at the feet of the family physician and cry: "Save me, or I perish?" But where was the family physician when the rout and ruin were being perpetrated, and what does it matter where he is now that the evil is well-nigh irremediable? He cannot minister to a mind or body so diseased with any miraculous draughts and potions, such as the untutored intellect of mankind has been demanding ever since it first conceived the idea of a fabulous fountain of waters conferring perpetual youth and health.

The average patient who finally occupies the "mourner's bench" in the waiting room of the city doctor doesn't really belong there at all. Instead, he ought to be at home in bed, recovering sanely and logically from his infraction of the laws of health and hygiene. But nothing is further from the average patient's thoughts than bearing his part of the blame for his condition. It is the same old story, the same old "hankering" after the fountain of waters that heals you in spite of yourself, the same old appeal to the doctor's supposed ability to administer some magic pill that will undo the long neglect of the laws of health and hygiene. "Yes, I know, Doctor, you warned me a year ago, or was it two years ago? But I didn't have time to rest then, and I haven't got it now. Just give me a tonic, will you? Or do you advise massage, or Turkish baths, or a short trip to some Eastern city for rest? I have to make a business trip East soon, anyhow." Or: "How about those pills you so grudgingly let me take a while last

winter when I couldn't sleep? And say, Doctor, what about this new treatment every one is talking about? Dr. So-and-So gives it. Anything to it, Doctor? Would you mind my consulting this fellow and see if he can promise me a cure?"

And the pity of it all is that just here, at the psychological moment for drawing that afore-said flaming "sword of the Lord"—right then, when in a voice of wrath the family physician ought to thunder out an anathema against the quack and his nostrums and his mercenary subterfuges—right then the ethics of the profession rise up between the doctor and his duty to his client, and, with a quiet and dignified tone of gentle remonstrance, he says: "I think you need rest and relaxation chiefly, but have no objection to your trying anything or seeking any treatment you feel will benefit you." Sometimes the sarcasm is so skillfully veiled that the patient is really misled, and I have known regular practitioners to be accredited with recommending patent medicines and treatments by really innocent interpreters of their opinions.

"But," says the physician when remonstrated with, "they will learn better and quicker from experience than from all the sermons I could preach," which is probably true. But what about the last state of such victims of experience with quacks and patent medicines, when they have "learned better" and returned to the true fold with their fleece all torn and tattered, and even sometimes absolutely wanting? Must not the regular physician on such occasions realize that he is something of a hireling, the man "whose own the sheep are not?" And ought he not to have put his crook around their silly little necks and have forbidden their wandering away into brier patches in the first place?

I heard a good doctor groaning the other day, "because," as he said, "people are not willing to be sick at all these days." "What are doctors for," they seem to argue, "if they cannot cure us quickly of disorders, no matter of how long standing or how gradually acquired?"

Emerson once said, in speaking of our modern educational methods, that the methods themselves were ideal. In so far as he could

see, the only thing they lacked was the *ideal child* to apply them to. And it is to a similar cause we are to look for the failure of some of our modern scientific medical theories and discoveries. The new systems and revelations are indeed *ideal*, but we lack the ideal patients to profit by them. Poor, weak, suffering mortals, catching at straws of relief and heeding the voice of any who offer speedy and easy succor, must be taught *wisdom* before they can appreciate the value of the new *knowledge*.

And the doctor himself must learn to constitute himself, if need be, a keeper of his brother's welfare and well-being, and must have the courage to demand compliance with the necessary conditions whereby the glad tidings of the New Knowledge shall be utilized, else useless will be all that consecration to the service of truth with which scientific investigators have devoted themselves to the cause of "man's redemption of man."

SECONDARY HEMORRHAGE FOLLOWING TONSIL AND ADENOID OPERATIONS.*

By W. SCOTT FARMER, M.D.,
Cookeville, Tenn.

I may have got in the wrong pew, so to speak; and if I have, you can kick me out, and I will try to get in the right place before another meeting of our State Society. I am not a specialist, but a general practitioner, but do occasionally remove tonsils and adenoids.

You may be thinking: "If he is a general practitioner, what right has he to even attempt to do a tonsil operation?" My answer is that I am from fifty to one hundred miles from a throat specialist, and many of my patients who need an operation are not financially able to consult a specialist and have the proper treatment by a physician specializing in this line of work. Another reason why I remove tonsils is that I recognize that the time is not far distant when I may have to give up general practice; and my observation has been that when a general practitioner finds that he has to give up his practice on ac-

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916, before Section on Eye, Ear, Nose, and Throat.

count of infirmities of advancing age, his source of income is too often so limited that he often dies a pauper. I think all practitioners of medicine should prepare in the morning of their youth to lay up treasures for the rainy days of old age. Another reason why I remove tonsils is that I find myself gradually taking more interest in diseases of children, including nose and throat diseases. Another reason why I remove tonsils is that I believe that I can do the operation successfully according to modern methods. I have been practicing medicine for a quarter of a century, and it has been only for the last five years that I have been doing tonsil operations. During this time I have done the operation between seventy-five and eighty times, without a single death, with only two cases of hemorrhage—one primary and somewhat alarming at the time of operation, and the other one secondary, appearing four days after operation.

In children I use ether as an anæsthetic and the cold-wire snare. Many of my patients I have operated upon in the sitting position after they were under the influence of the ether, raising them to the sitting position; but as it takes more assistance to operate this way, I am gradually giving up the sitting position and now do all the operations with the patient lying down. For the removal of adenoids I prefer the adenotome, followed by the curette and finger.

In the adult I seldom administer an anæsthetic; I use locally cocaine ten per cent and novocaine to inject into and around the pillars. These patients should be prepared for operations just as any other operation in surgery.

I have reached the following conclusions from my limited experience:

First. The complete enucleation of the tonsil is not an operation to be undertaken without deliberation, for it involves the most important questions of anæsthesia—hemorrhage and technique.

Second. I am willing to admit that the safest place to perform the operation is in a hospital, but many physicians do the operation successfully in their offices.

Third. Chloroform is always contraindicated, and should never be used.

Fourth. Always take the temperature; and if as much as 100 F., do not operate, as it may be the beginning of serious sickness. In one of my seventy-five cases temperature was 100 F.; and

although I did operate against my better judgment, the patient did fine; but, as a general rule, it is not safe to operate with temperature of 100 F.

Fifth. Six weeks to three months after operation in children, insist on patient returning for examination of nasopharyngeal vault for adhesions. While some authorities deny these adhesions, they do occur occasionally, and the surgeon who removes tonsils and adenoids in children and fails to have the patient return to him in a few weeks for an examination fails to do his duty.

Sixth. Although I have failed to do a complete operation in some cases, no one I have ever operated upon has had cause to regret it.

Seventh. The complications of scarlet fever, otitis media, deafness, etc., are much more serious in children with enlarged tonsils. Children who are anæmic and of defective growth will often make remarkable improvement following removal of diseased tonsils. Adenitis is a very unusual occurrence in a child who has had tonsils and adenoids properly removed.

Eighth. The most brilliant results have occurred in my hands in children operated upon between the ages of four to eight years of age.

Ninth. I do not believe in operating upon every case simply because the patient has tonsils, but all diseased tonsils should be removed regardless of age.

Tenth. I have operated on all sizes, the fat and the lean, and all ages, from four to forty-two years of age.

Eleventh. I never fear hemorrhage in children; it is only in the adult that hemorrhage is to be dreaded—not so often in the adult, but often enough to be on our guard.

Twelfth. Do not forget that the man who does surgery of any kind will sometimes have a death in his practice when he is least expecting it. We should be prepared beforehand for any emergency and do our best for every patient, be he a pauper or millionaire.

On the 21st of last December a young lady, aged fifteen years, appeared at my office to have her tonsils removed. This was the third time she had come for operation. She had come twice at intervals of one week each prior to the day of operation, and each time there appeared to be too much congestion. The day of operation the tonsils appeared to be in good shape, and she was

anxious to have the operation before Christmas. So under the influence of cocaine and novocaine the tonsils were removed, and also a very large adenoid that filled the box of the adenotome, which appeared to be of a fibrous nature. This peculiar appearance of the adenoid vegetation was noted at the time, and I spoke of the character of it to another physician who assisted in the operation. I was rather liberal in the use of adrenalin by swabbing on tonsils before the operation; and after the operation was complete, there was scarcely any hemorrhage. The patient remained in my office for three or four hours, after which she went to her home, some three miles from my office. I heard from her each day, and the telephone report was that she was doing fine, except occasionally she would blow some blood from her nose. I thought there was nothing alarming about this; but on the fourth day after operation I was called to see her, she having considerable hemorrhage from the posterior nares. During sleep the previous night she evidently had swallowed considerable blood, as there was a large quantity passed by the bowels. This hemorrhage continued for a few hours, and ceased under the influence of peroxide of hydrogen, adrenalin, and other styptics applied locally. The patient made an uninterrupted recovery, and is well pleased with the result of operation, although she missed her Christmas fun.

The singular phase about this case is as to why the hemorrhage was delayed for about four days after the operation. As a general proposition, if a patient has no hemorrhage in one or two hours after operation, hemorrhage is not to be dreaded. The reason I report this case is that it is uncommon and of interest, especially to one who is not a specialist in this line of work.

TONSILLECTOMY—INDICATIONS AND TECHNIC.*

BY E. L. ROBERTS, M.D.,
Nashville, Tenn.

Some years ago, when interest in our local Academy of Medicine was at a low ebb, I was talking to a professional friend about what might be done to improve the situation. He said to

me: "Write a paper on some subject, take an extreme stand, and you will start something." At this time I have tried to write a paper; I have tried equally as hard to avoid taking an extreme stand; and if I shall succeed in starting a liberal and rational discussion on this important subject, I shall be well pleased, however much the opinions expressed may differ from my own.

Much has been written and said in the past five years on this subject, but there is still much to be said. Dr. John R. Fletcher, of Chicago, in a recent issue of the *Annals of Otology, Rhinology, and Laryncology*, said that the history of operations upon the faucial tonsils is of doubtful credit to our specialty. My own opportunities for observing the work of other operators have convinced me beyond all doubt that the quantity of tonsil surgery done is far outstripping its quality. This is due to a rapid growth in the amount of work done and to the change from tonsillotomy to tonsillectomy, which, at the present time, is almost the universal operation on the tonsils.

On the question of the indications for tonsil surgery the profession is not yet so unanimous as on the operation itself; and here, too, I believe, we are making many mistakes. It is very far from being an easy matter in every case to say positively that a tonsil should or should not be removed. In determining the advisability of a tonsillectomy, we should consider the size, the position, and the condition of the tonsil. This is true as much of the third tonsil or adenoid as of the faucial tonsils. And in many cases where the size, condition, and position of the tonsils seem to be perfect we can trace diseases of a general character to diseased tonsils.

There are several indications for tonsillectomy, any one of which alone would justify the operation, though it is doubtless rare that one, and only one, indication exists. The indications will now be enumerated:

1. A tonsil that is hypertrophied is one whose removal should be considered. If the patient be a child, other indications should be looked for; but if the patient be an adult, hypertrophy is a sufficient indication.

2. Submersion to a great degree is almost always an indication for tonsillectomy; but if the patient be a child and an accurate history and a careful examination bring out no other indications, the tonsil may safely be allowed to remain.

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

3. A tonsil that is frequently inflamed should always be removed.

4. A tonsil in which there is a chronic and hard or offensive discharge from the crypts should be removed.

5. If there are enlarged cervical glands, the tonsils should be removed, unless they can be positively eliminated as a causal factor.

6. If a patient's heart, kidneys, or joints be affected, or if he has chorea, the tonsils should be removed, unless their condition is such as to eliminate them positively as a causal factor.

7. Chronic toxemia without definite known cause suggests tonsillar trouble; and even though the patient has never had any trouble that he refers to the tonsils, unless a positive cause for the condition can be found elsewhere, their removal is indicated.

8. Adenoids should be removed when large enough to interfere with nasal respiration, or so situated as to impinge on the Eustachian tubes, or so fissured and pitted as to cause a chronic post-nasal discharge.

If the above indications are followed, the benefit to the patient is always positive and lasting.

With a given case before us for operation, the preparation of the patient and the anæsthetic are to be considered. If the patient be fifteen years old or over and one you can depend on to give proper coöperation, I prefer a local anæsthetic. One-half hour before the operation a hypodermic of 1-8 to 1-4 of morphine and 1-300 to 1-150 of atropine should be given. For the anæsthetic I think novocaine is the best and safest. A five-per-cent solution is swabbed on the folds and pillars, also on the palate and base of the tongue. Five minutes later another application is made, and five minutes later a third. This is followed by the injection of a one-per-cent solution. The injection is made with a straight or curved needle, and should reach well the outer surface of the tonsil; but the needle should not pass through any surface that is to remain after the removal of the tonsil. Immediately following this it is well to swab the anterior pillar with a 1,000 to 2,000 adrenalin chloride solution. This certainly reduces the bleeding to some extent. Within five minutes after the injection the operation can begin.

If the patient cannot be depended on with a local anæsthetic, a general one will be required, and ether is certainly the safest. The hypoder-

mic of atropine and morphine may be given here also, but it is not needed so much as when a local anæsthetic is given. On the afternoon before the operation a castor-oil purge should be administered, and on the morning of the operation no breakfast should be given. Profound anæsthesia should be secured before the operation is begun. This point cannot be made too emphatic.

Tonsillectomy consists of the removal of all the tonsil, and great care should be exercised not to remove anything but the tonsil. When this is properly done, the operation is a major one; and the operator who fails to so consider it fails to appreciate the importance of his case. For the operation I prefer to have the patient in the dorsal position and to stand on his right. These positions are the usual ones. To do a tonsillectomy with certainty and safety, it is absolutely necessary to have a good exposure of the field of operation, so that you can throw your light, which comes from a head lamp, on any or all parts of the field. The exposure necessary is best obtained with a self-retaining mouth gag, with a tongue depressor attached. With such an instrument, one less assistant is necessary than otherwise.

Having secured the proper exposure, the anterior fold and pillar are retracted. Then with a fixation forceps, over which the snare can be passed, the tonsil is seized and drawn toward the median line, and also pushed backward so as to put the fold on the stretch. With a blunt-pointed, two-edged separator curved slightly on the flat, the incision is begun below at the inner edge of the fold and made upward. As the superior fold is reached, the blade is turned from a vertical to a horizontal position and brought toward the median line; and as it passes over the pole, a downward and forward turn of the edge may be made, so as to separate the posterior fold or pillar. This separation should be carried well down. The separator is then placed in front where the incision was started and made to sweep downward to complete the separation of the fold below. Care should be taken not to buttonhole the pillars or cut through the capsule. The first sweep of the separator may remove the coverings from the capsule only a short distance outward; so the movement should be repeated till the pillar is separated well back and the tonsil slips out free from all anterior, superior, and posterior coverings. If the tonsil is submerged

so that a firm fixation cannot be secured at the beginning without grasping other structures, it is well, after partial separation is made, to release your hold and take a better one. When the tonsil is released, it may slip back into its fossa under its coverings. If it does, it will be a very easy matter to hold the fold and pillar outward with the retractor while a firmer fixation is secured. Having secured the new fixation and completed the separation, draw the tonsil toward the median line and place the snare around it and cut it off.

Just as I bring the tonsil out of its fossa, I have the assistant place a piece of gauze into the fossa and hold it with gentle firmness for a minute or two. During this time I inspect the tonsil just removed. This is important, for it shows whether or not the tonsil has been removed with its capsule intact. Then I have the gauze withdrawn, and with the retractor draw the pillar outward and upward so that all parts of the fossa may be inspected. It is important not to leave the lingual tonsil swinging too far out, for it may grow backward and upward to such an extent that it looks like a large mass of faucial tonsil. If a tonsil is submerged and the fissure between the lobes is deep, it is an easy matter for a careless operator who has a bad light and poor exposure to leave the entire upper lobe; and while the careful operator does not like to see that he has left any part of the tonsil, if he finds that he has, there is but one thing to do—go back and get it. The bleeding is very often profuse for a few seconds, but the pressure as indicated above will nearly always control it. If the pressure does not, then pick up the bleeding point with hemostatic forceps and pinch it or twist it, and this will almost surely stop it. Sometimes it is necessary to ligate the bleeding point. My experience has been that the most profuse bleeding is from below, while the most persistent is from above. I have never seen any bleeding that proved the least formidable. All bleeding, unless it be only a very slight oozing, should be stopped before the adenoid is removed. Operations under local anæsthetic cause less bleeding than those under general.

After all bleeding has been controlled, it is well to apply an antiseptic to the fossa. I use a twenty-five-per-cent iodine solution, and the subsequent soreness is much less than where nothing is used. Secondary hemorrhage may occur

as late as the ninth day, and should be treated according to its severity.

If the third tonsil or adenoid growth is to be removed, its removal should follow that of the faucial tonsils; and this part of the operation should not be treated so lightly as is often done. The removal can be well accomplished by using the LaForce adenotome and following that with a curette. The handle of these instruments should be kept in the median plane of the head during the operation. Great force should never be used with the curette. Care should be taken not to strip up the mucous membrane of the pharynx below the adenoid, and thus leave part of the growth attached to the posterior wall.

Several other operations have been devised for the complete removal of the tonsil, but no one of them is so good as the operation just outlined.

The dissection may be done entirely with scissors, but there can be no advantage in such a method over the snare operation. I mention the finger dissection only to condemn it. Nothing can be done with the finger that cannot be done better some other way. The greatest objection to the method is the danger of breaking the anterior pillar by passing the finger between it and the tonsil.

The Sluder method gives fine results in the majority of cases; but, with it, failures are sometimes unavoidable; and so there are no valid reasons for employing it when a method can be employed in which failures are never a necessity.

Following the operation, whether a general or local anæsthetic is used, the patient should remain in bed twenty-four hours, and longer if he feels better there. For several days no solid food should be taken, but the diet should be sufficient and nourishing. The alimentary secretions should be kept active, and all precautions should be taken to avoid contracting cold. Much difference of opinion exists concerning the value of gargles. I believe that a gargle, with patients old enough to use it, is valuable; and there is probably no better than salt water, teaspoonful to a quart.

A few points are emphasized by repetition:

The quantity of tonsil surgery is far outstripping its quality, and both the indications and technic of the operation demand our most careful consideration.

The pharyngeal tonsil should not be removed unless there are most positive indications for its removal.

You are on the safe side in removing the tonsils of an adult if any indications whatever are present.

It is impossible to do accurate and safe tonsil surgery without a good exposure of the field and a good light.

In general anæsthesia all bleeding should be controlled before the patient is removed from the table; yet it should be done with the least traumatism possible.

The patient should remain in bed for twenty-four hours after the operation. He should take a liquid diet for several days, keep his secretions active, and use a mild saline or alkaline gargle.

DISCUSSION ON THE PAPERS OF DRS. ROBERTS AND FARMER.

DR. O. DULANEY, Dyersburg: I am glad that Dr. Roberts dispensed with one thing in his paper, and that is, he dealt with tonsillectomy instead of tonsillotomy.

As to the indications for tonsillectomy, to-day we know of no more important subject for discussion than the infected tonsil. As Billings and Rosenow have demonstrated to us very clearly and thoroughly, there are many infections that result from infected tonsils; so that this subject has become more and more important to the general practitioner and general surgeons from every standpoint.

Being associated as I am in a hospital with surgeons, I naturally come in contact with a great many cases of metastatic infection, and many of these cases of infection can be traced indirectly to an infected tonsil; so that it is very essential to take time to study each and every case.

Just a few days ago a boy six years of age was brought to the hospital to the orthopedic man to put on a plaster-of-Paris jacket. The little fellow's temperature was 102 degrees, which he had had for five weeks. He was very much emaciated, previous torticollis, and also had decided rigidity of the muscles of the back—in fact, he could not bend the back at all. We kept him in the hospital for two days trying to make a diagnosis with the aid of our pathologist. The patient never gave a history of an acute attack of tonsillitis. After making an X-ray picture, we could not make a diagnosis of any tuberculous condition positively; so that we thought there was infection of the spine of a tubercular nature; but from the appearance of the tonsil it was evident to us that the boy was getting some infection from that source. We decided to do a tonsillectomy. On Saturday, at eleven o'clock, his tonsils were removed; and I pledge you my word for the statement that this little fellow could touch the floor the next day with his fingers, just twenty-four hours having elapsed from the time the operation was done. The result in this case seemed to be marvelous. When the focus of infection was removed, the localized pain

in this case immediately subsided; and it shows to us that in this particular case it was more of an inflammatory condition of the muscles, and he was getting his infection from the tonsils.

I have another case in mind of a young lady who taught school formerly in the city of Nashville, and a prominent practitioner in that city removed her tonsils under local anæsthesia. This winter the young lady was advised to quit teaching and go West. She had lost considerable weight, was running a temperature of 101 degrees, and had for some time; and on examination we found she had a pneumococcus infection of the throat and a focus of infection from the adenoid. We made an autogenous vaccine for this individual case, and removed the adenoid tissues. She gained twenty-two pounds in sixty days, showing the marvelous results we get from removing the tonsils and adenoids.

So the indications for the removal of the tonsils in these cases is so large that we cannot possibly cover them. Every case, you might say, of infection is a law unto itself. During the winter months in two cases I saw the necessity for tonsillectomy following what we call an "epidemic" of pneumococcus infection of tonsils. I recall one patient who immediately following an acute attack of tonsillitis, before the inflammation subsided entirely, developed an acute fulminating appendicitis. Knowing that the tissue around the appendix is so similar to the tissue around the tonsils, it is natural that there should be some affinity for pneumococcus infection or any infection involving the tonsils. We should watch cases of la grippe where we have throat involvement as a cause of epidemics of appendicitis. They seem to run along together.

As to the method of removing the tonsils, I remove them under general anæsthesia. Of course if I come in contact with a patient who cannot take a general anæsthetic, I would probably use local anæsthesia and would adopt the method that has been outlined by Dr. Roberts; but for the past two years I have had no excuse for not giving a general anæsthetic. As a preliminary step, I give them 1-4 grain of morphine and 1-150 grain of atropine, regulating the dose for children. The atropine dries up the secretions of the throat and aids to that extent.

As to the use of a tongue depressor, it is all right in some respects; but I have had no occasion to use it yet. It may do away with the assistance of one nurse. The thing I use for controlling the tongue is the ordinary towel clip; and with the nurse standing to the left side of the patient, she holds the tongue well out of the mouth without making any special traction upon the tongue. Only occasionally do I use a tongue depressor at all in the entire operation. With the little expanded end of the tongue depressor pressing on the base of the tongue, I get my fixation forceps well on the tonsils, or in some instances I use in cases of submerged tonsils Boettcher's hook. After fixation of the tonsil, I select a point for beginning my dissection, and merely separate the tonsil from its pillars. It is unnecessary to have Boettcher's scissors or those described, but an ordinary pair of Jackson's curved scissors is one of the best things on the market. I use them with the dull and

sharp-point blade, and then on the edge; and there is nothing better for dissecting around the tonsil than Jackson's abdominal scissors. After dissecting, then I apply the snare; and with one of Boettcher's hooks I lift up the soft palate for fear I might get the uvula caught in the snare. Personally, I have never had any hemorrhage from this method; but if there is bleeding following the operation, I take a sponge about the same size of the tonsil and with forceps place it in the cavity. Only in one instance have I had any bleeding at all. It was controlled by a hot sponge and slight pressure.

DR. W. W. POTTER, Knoxville: I cannot let this opportunity pass to say something about this subject, because it is one in which I am particularly interested. We have all seen a great many tonsil operations. We have all done a great many. We all know that in the beginning we see some men who do these operations that way and others another way; and we try to follow their method until we have done a hundred or two of these operations, and then we do them according to our own notions and ideas. Personally, I have my own way of doing a tonsillectomy. I have never seen anybody do it like I do, nor do I think any other method is as good. We all think that our particular method of doing a tonsillectomy is the best. We all have different mouth gags, different tongue depressors, and different instruments for this operation. Personally, I have three instruments for ordinary cases of tonsillectomy except the mouth gag. This newfangled tongue depressor attached to the mouth gag, like the one we have seen, I simply mention to condemn it. To me that thing is a nuisance, with all due deference to Dr. Roberts. I have seen a good many of them and I have used many. I believe I have used every one that has come out; but these things are good for nothing except to smother the patient, and you have to remove it in order to resuscitate the patient. That has been my experience with these self-retaining tongue depressors. I do not think any tongue depressor I have ever seen is as good as the index finger of my left hand. On grasping the tonsil, I put that on the tongue, pull it down, get hold; and if you have the right kind of forceps, it is all the tongue depressor you need. I do not need to pull it out on this or that side. The tongue does not give me a particle of trouble in these operations. As to finger dissection, the doctor mentioned it to condemn it, like I do. I do not see any reason on earth for dissecting with the finger. There is absolutely no excuse for it.

Regarding the anæsthetic, to my mind there is only one, and that is ether. I always insist on ether. I do not operate unless the patient is given ether. I use it as a routine, and I do not use anything else. Chloroform is out of the question.

In regard to local anæsthesia, the doctor spoke in his paper of using cocaine. He has more nerve than I have to use cocaine. I would not use it in a tonsil operation, as I think it is bad practice.

DR. ROBERTS: I beg your pardon. I studiously avoided mentioning cocaine or the use of it.

DR. POTTER: Then I was mistaken. Reference must have been made to it in the paper of Dr. Farmer, be-

cause we are discussing two papers; at any rate, I only mention it to condemn it.

In regard to secondary and primary hemorrhage, in most of the cases I have seen the primary and secondary hemorrhage have been due to portions of the tonsil being left in the fossa. I have seen a good many hemorrhages directly due to or entirely due to small pieces of the tonsil being left. If you search the fossa, you will find a small piece of tonsil that is left, and the hemorrhage comes from it; and after its removal, the hemorrhage ceases immediately. I have never had hemorrhage that amounted to anything. I do not recall ever having had secondary hemorrhage. As I have said, I believe in these cases the hemorrhage is due to small portions of the tonsil being left; and naturally the little piece that is left will slough off and open up fresh capillaries and blood vessels, and the hemorrhage comes from that.

DR. E. C. ELLETT, Memphis: I would like to express my appreciation of these two splendid papers on the tonsil. Both of them are thorough, sound, and sensible; and those of us who have not already crystallized our ideas would do well to follow these two papers, because they are of a kind.

In regard to the indications as laid down by Dr. Roberts, the only ones I would question are those with reference to the size of the tonsil. He speaks of removing the hypertrophied tonsil and of removing the submerged tonsil. I do not see why we should disturb a submerged tonsil unless there is something the matter with it. His idea of what constitutes a submerged tonsil and mine do not agree. Hypertrophied tonsils are more apparent than real. If the tonsil is situated in one position with reference to the pillars, it may look small; whereas the same tonsil situated that way (protruding) with reference to the pillars seems very large. If we had a standard size of tonsils, I think we would be in a better position to judge as to the desirability of removing them on account of their size.

In regard to the anæsthetic, I agree with what has been said, except that I prefer to use ether by the vaporizer—that is, to have the tube attached to the mouth gag and use the anæsthetic in that way. It keeps the patient under its influence better, and it does not let the patient out from under the anæsthesia and necessitate putting him back under it again, and it is more satisfactory.

I would like to assure the last speaker that his fears about the use of cocaine are exaggerated. I have used it hundreds of times for removal of tonsils, and have never had any trouble with one yet. I have used it by injection. I do not use it much any more, because I prefer in all these cases to put the patients under the influence of a general anæsthetic. However, if you do these operations under local anæsthesia, you need not be afraid of a little cocaine.

I have had some very pleasing results with general infections cured by removing the tonsils. Patients have come to me with obscure fever, with temperature for six or eight weeks, without much being apparently wrong with them, and the removal of the tonsils would afford them relief. I have had many disappointing re-

sults in the relief of cases of rheumatism following the removal of the tonsils.

One point about controlling hemorrhage. If after removing one tonsil you take a piece of sponge and tuck it into the fossa, it will stay there without any string and without putting clamps on it, and it will control the hemorrhage.

As to the Sluder method, I advocated it on the floor of this association four years ago, and I had already had experience with it. In it we have a method whereby we can introduce one instrument one time into the throat and do the best tonsil operation that it is possible to accomplish under all circumstances. The Sluder instrument has been variously modified. This one is modified only in the presence of this screw [indicating], whereby you drive the instrument down rather than do it by finger pressure, and you can make it as slow as you like.

I have here two tonsils and an adenoid from a case, and would like to show them. They are not selected specimens, but they are the regular run of Sluder specimens. The tonsils came out everted, and these are turned back, and the side which you see here [indicating] is the capsular side. If there is any method of dissection that will get them out more smoothly, then I have never seen it used. It gets the tonsils out that way nearly every time. The first speaker said not every time. That is true. Neither does any method get the tonsils out neatly every time.

He spoke of leaving pieces of tonsil, and the thing to do is to go back after them. If you leave a piece in the Sluder operation, you can go back and get it out. Since I have used this method for the first time, I am perfectly willing for all my cases to go to my bitterest enemy; and if he can find anything to criticize in them, he is welcome to do so.

DR. WALTER DOTSON, Lebanon: I wish to compliment Dr. Roberts on his excellent paper, because about four or five years ago I presented a paper before the Middle Tennessee Medical Association recommending practically this same operation for tonsillectomy. Of the men who discussed my paper at that time, I believe Dr. Roberts was one of the number who took issue with the operation of tonsillectomy, saying that the time was not ripe to do tonsillectomy; that we should continue to do tonsillotomies. But I specially want to commend him for being converted to tonsillectomy and for preaching the gospel I have been preaching for some years.

In reference to this mouth gag that Dr. Roberts presents to us, like Dr. Potter, I believe it is a nuisance, just as all of the others are. It is a common mouth gag, with a tongue depressor attached, because each time I have tried to use them and have had something very important to do, the mouth gag jumps out, it will slip, or something will happen to spoil the technic. Dr. Potter expressed the matter very tersely when he said that the best tongue depressor possible is the index finger.

As to the method of dissection, each one of us has his own way and develops that way, as has been pointed out by Dr. Potter.

Dr. Ellett, in discussing the subject and recommend-

ing the Sluder method, speaks of it very highly. If I remember correctly, Dr. Ellett told me about two years ago in New York that he had about quit the Sluder method; that he had tried it (and he can correct me if I am mistaken about it), and there was so much danger from hemorrhage following the Sluder method that he became entirely afraid to use it any more. While in New York this year, there was no record kept of the 200 Sluder operations and the number of snare operations; but during the 200 Sluder operations we performed I must admit that while it is one of the most perfect operations, when it is perfect, and one of the quickest to be done in the hands of an expert, yet it takes an experience of three or four hundred operations before one is able to learn how to do it. In the Brooklyn Eye, Ear, Nose, and Throat Hospital they would average a Sluder operation in two minutes, giving the general anæsthetic and performing the operation as well. If they have ten Sluders to perform, they will do them in twenty minutes under ether. I think that is a little too rapid to do tonsil surgery.

My objection to the Sluder operation is the hemorrhage following it. I have witnessed one of the best men in New York do the Sluder operation—Dr. Douglas, of the Postgraduate Hospital—who could do it in two or three minutes, and then on one occasion it did take two or three hours to control the hemorrhage that followed the operation. In justice to Dr. Douglas, I will add that he personally prefers and privately uses the snare. I do not know whether it is due to the modification of the Sluder instrument or not, but some of them are sharp and others are not. Some yoke it in from the inside and some from the outside. There are many ways of doing the Sluder operation.

DR. C. J. BROYLES, Johnson City: I have enjoyed this discussion very much, but I do not believe I have ever seen a body of surgeons that professed to object so little as you men here do to tonsillar hemorrhage. I have done a great many of these operations, and I have seen many more done, without severe hemorrhage even when the tonsils were dissected out in their capsule. In fact, I have not seen any cases in which the hemorrhage could not be controlled by full doses of morphine and atropine; but I do not know how it is that so many look upon tonsillar hemorrhage, either primary or secondary, so lightly.

Another thing. Are we to understand from this discussion that all hypertrophied or enlarged tonsils, whether diseased or not, should be totally removed? How about children? Children may have enlarged tonsils, but be in perfect health otherwise. I think in simple hypertrophy that tonsillotomy should be done instead of tonsillectomy. Tonsillar tissue is there for some purpose, and to wantonly waste it, where there is nothing but enlargement, I think it is not right, though I would rather do a tonsillectomy than a tonsillotomy. I do not believe in young people that all tonsillar tissue should be removed unless it is diseased.

Another thing that I have seen done frequently, and have done it myself often, is to circumcise the tonsil and provide for thorough drainage of it, and it will shrink away to nothing. In the tonsils, where there is

infection, as evidenced by rheumatism or heart trouble, or any other trouble that is brought about by infection from the chronic absorption of pus, the tonsils should be thoroughly excised; but in cases where they are drained properly and leaving them otherwise alone, I have seen very good results.

In the further discussion of this subject I would like to hear some expressions of opinion as to whether you mean all of the tonsil to be removed that shows no signs of disease in capsule.

DR. CHARLES HUFF DAVIS, Knoxville: If Dr. Potter thinks he is the only man who has the best way of removing the tonsils, he is very much mistaken. I think I try to embody the essentials of everybody's technic. I use the Delstanche mouth gag. I sometimes use the Pyncheon tongue depressor. I use the Ballenger tonsil forceps, the Boettcher snare, the Sluder guillotine. So that, in reality, it is nobody's operation, but a digest of all of them.

As to the relative merits of tonsillotomy and of tonsillectomy, I had thought tonsillectomy was a thing of the past. I believe we are largely sentimental with regard to the tonsils having a function, but we do not know what function the tonsils serve.

Last week I did a tonsillectomy on a child for whom, a year ago, I did an adenoid operation. The tonsils then were not particularly hypertrophied; but the child continued to have repeated infections of the middle ear, sore throat, ulcerative tonsillitis. The tonsils, during the year, had become a great source of annoyance; and the father asked me why I did not always take the tonsils out at the same time I did the adenoids if tonsils behaved that way.

The question comes up to us as to what tonsils shall be taken out and what tonsils shall be left. Tonsils are evolutionary tissue, not unlike the appendix, and they are doubtless relics of evolution, and perhaps they have no real function except to give us cause to talk about and to discuss mooted points in regard to the technic of their elimination. Consequently, I believe every tonsil ought to come out, in the presence of disease, just as the surgeon is called in and does oöphorectomy, and at the same time says to himself that this is a fine chance to take out the appendix to prevent future trouble. When we see the surgeon doing this, it does not sound so silly; and if he does this in dealing with conditions in the abdomen, why should we not do it in case of the throat?

Tonsillectomy is a specific for some things, one of which is quinsy. You cannot have peritonsillar abscess after you have taken out the tonsils. I have had marked success in treating rheumatics, and have revealed numerous focal infections by the removal of the tonsils. Sajous has said that the tonsils are the open ulcers of the body. And they act that way. Children who have eruptive fevers have them worse. Children who have diphtheria have a more severe attack of it when they have enlarged tonsils and adenoid tissue in abundance. On the other hand, children who do not have enlarged tonsils and adenoids in abundance do not have the serious cases of diphtheria. The same conclusions in scarlet fever, measles, etc.

Dr. Ellett's remarks with reference to the submerged tonsil were very good. It is just as big as the one in a state of erection sticking out into the throat, and possibly does more real damage. My attention was first called to the submerged tonsil by Dr. Pyncheon, of Chicago, now deceased. He wrote an essay on the subject in 1898, and devised the electro-cautery dissection. I suspect that he was about the first advocate of tonsillectomy.

One suggestion I can offer is with reference to the use of anæsthesia. Here we have a surgical condition to deal with, a hospital operation; and the patient should be thoroughly anæsthetized, so that all throat reflexes are abolished. The movements of the throat are the causes of some traumatism, and they should be absolutely abolished. Ether is the preferable anæsthetic. Cocaine, as a local anæsthetic in a child, is absolutely contraindicated. Ether is safe, and we need have no fear nor trouble about it.

DR. EDWIN L. ROBERTS, Nashville (closing on his part): I appreciate the liberal discussion that has been given to my paper; and, in the first place, I desire to take up the last point that has been mentioned. I did not say anything in my paper to intimate that I thought the submerged tonsil or small tonsil should not be removed. I mentioned the large tonsil as being in a class by itself. In the second place, I mentioned the submerged tonsil without reference to its size. I am well aware that in certain cases the submerged tonsil is often a large tonsil, and recently I operated on a case that showed no tonsil before the operation. The patient gave a history of having the tonsils removed five years ago by a prominent surgeon, but she continued to have tonsillitis worse than before. These tonsils were about the size of those exhibited by Dr. Ellett. They were about as large as the average tonsil.

Should all enlarged tonsils be removed? I tried to make it clear that I do not think so. A tonsil in a child can be quite large; and if there are no other indications for its removal, it is perfectly safe to allow it to remain and watch the case.

As to the anæsthetic, there seems to be some little difference of opinion or misunderstanding. I want the anæsthetic continued throughout the operation, of course; and the anæsthetist does not have to remove the anæsthetic. He puts a cone over to get the patient to sleep, and then puts a curved tube in the mouth or uses the nosepiece. I prefer the curved tube in the corner of the mouth. If the patient's air passages are closed up with adenoids, he will not get as much ether through the nose as he ought to have. The patient must be thoroughly anæsthetized, to begin with, and all through the operation, because, if he is, you can see what you are doing better. The throat muscles are not contracting and relaxing, and bleeding will not occur anything like so much as if you anæsthetize the patient and then let him come halfway out.

Dr. Broyles spoke of hemorrhage, and thinks that all of us consider bleeding rather lightly. I do not look on it lightly myself; and if there is anything I have anxiety over, it is bleeding; and that is why I insist on having perfect exposure of the field of operation and

a good light. With these you can see where the blood is coming from and control it. Free bleeding will occur below the point at which the surface of the tongue will lie if it is not held down.

As to having these patients return, as suggested by Dr. Farmer, in a few weeks after operation, I have them return in a few days, or just as soon as they are able to come back.

As to the occurrence of symptoms of appendicitis in connection with enlarged tonsils, I do not know whether there is anything in that or not. I have had, in the last six weeks, three young women with severe follicular tonsillitis, in each of whom there were pronounced symptoms of appendicitis. In one instance a surgeon was about to have the patient taken to the hospital to operate, but decided a little later not to do so.

To come back to the submerged tonsil again, if a tonsil is submerged, whether it is large or small, there will probably be other indications for its removal. You can hardly have a deeply submerged tonsil without having the crypts closed; and when the crypts are closed, there will certainly be other indications; and that is why I insist on the removal of these submerged tonsils. If we have a child to deal with, there may possibly be no other indications, and then we may allow the tonsils to remain; but the case will bear watching.

In regard to the compliment of Dr. Dotson which he paid me, I desire to say that I do not think I took the position he attributes to me; and I can say truthfully that I never did but one tonsillotomy intentionally. I have done a few somewhat after the manner Dr. Ellett has described as pertaining to intracapsular extraction of cataract. But I have never had but one case where I intentionally cut off a part of the tonsil and left the other part.

Further, about the question of tonsillotomy. Frequently I have taken out tonsils that had been operated on previously by tonsillotomy, since I found that these tonsils had given more trouble after tonsillotomy than they had before the operation was done. Scar tissue is formed around the line of incision, contraction takes place and closes up the stump of the tonsil, and the infection does not have the free outlet which it did have before. I have taken the position, and still maintain it, that if you do any surgery on the tonsils, take out the whole tonsil. If you remove any part of the tonsil, remove it all.

To go back to the instrument just a minute. Some one said that he had used an instrument just like the one I have exhibited. I think he is mistaken, as I do not believe there is anything like it on the market, and there have been only two of these made. I have used this instrument or seen it used in something like two hundred and fifty cases, and I can say that I have yet to see the first case where it had to be removed to allow the patient to breathe; and I believe, if properly placed, it will never interfere with respiration.

The operation shown by the drawings required more time than usual, because the bleeding was free and because the artist required some time. Still, there was not the slightest indication of any smothering on the part of the patient. Neither the mouth gag nor the tongue

depressor was moved a hair's breadth during the whole operation. The anæsthesia, of course, must be kept up uniformly during the time of the operation, or you are going to have trouble.

The criticisms made by Dr. Potter remind me of an incident in the life of a Methodist presiding elder I used to know. On one occasion, when he delivered his regular sermon at one of his churches, he inquired about Sister Brown, who was not at the meeting, and was informed that Sister Brown said that she never came out to meeting when he preached. "Well," said the presiding elder, "you tell Sister Brown that I said that that is just about as much reflection on her as it is on me." So if Dr. Potter has failed to appreciate this instrument, you will please tell him that I said that that is just a little more of a reflection on him than it is on the instrument. [Laughter and applause.]

DR. W. SCOTT FARMER, Cookeville (closing the discussion): I appreciate the discussion on my paper; and as I am not a specialist, the points have been pretty well taken and the ground thoroughly covered; so that there is very little left for me to say.

The hemorrhage I had in the second case I reported was not from the faucial tonsil, but from the adenoid, although I had taken great pains, as I thought, to remove it all. I know that some of the authorities claim that hemorrhage occurs on account of pieces of tonsillar tissue being left.

There is but one point I want to emphasize particularly in my paper, and that is the importance of patients returning to you for examination after you have done the operation. Dr. Roberts has told us that he always has his patients return inside of a week. The point I would insist on is this—namely, that you should know what you are doing as specialists. I imagine that you are very busy, and frequently operate on as many patients in one day as I do possibly in a month; but I believe it is well for you to see these patients six months after operation, even though they may live a hundred miles from you. Tell them to drop in to see you whenever they can. You may have done a brilliant operation, but six months or a year afterwards you will frequently find something in the throat that—I will not say that you will be ashamed of; but, still, you will have a chance to criticize your own work perhaps in one out of a hundred cases. That is the only point in my paper I want to insist on; and when any of these patients return, give them a few minutes of your time and tell them it won't cost anything. Be certain and look at their throats time and again, and keep up with your work. Considering the few cases I have operated on, I have always examined the throats of these patients a year or two afterwards every time I have had an opportunity to see what I have done, and thus criticize my own work rather than to have some other man do it.

It's foolish to educate a boy and then let him die of typhoid fever.

"Mouth breathing" makes children stupid.

WHY GO TO AN OCULIST FOR REFRACTION?*

BY W. W. POTTER, M.D.,
Knoxville, Tenn.

I know that as oculists we appreciate the importance of our specialty, and I feel that the profession, as a whole, is realizing more and more every day its importance.

"Why go to an oculist for refraction?" is a question we all can answer; but that the great majority of people who wear glasses do not go to an oculist for refraction is a fact beyond question. There are reasons for this state of affairs; and if we can get at these, we may be able to do something to remedy it.

If any of you will visit the jewelry stores in your city, you will find that most of them are doing a good optical business; and you will find also that the majority who go there for glasses are among the best people in your city. Why don't they go to you instead of the optician? I believe I know why. Because, for various reasons, you do not give them any better service than the optician gives them, and they have become cognizant of that fact. They feel that they are getting just as good service for less money, which is true in a great many cases.

The average individual does not appreciate the difference between the competent oculist and the optician, and they never will appreciate this difference until we, as oculists, prove to them by our careful, scientific work that there is a difference, and a great difference. We will have to learn what refraction really is, and then we will be in position to teach the people the advantages of having their eyes carefully refracted instead of simply having glasses fitted by the young lady at the ten-cent store, the optician, or the traveling spectacle peddler.

We will have to learn or remember that, in ophthalmology, refraction means the optic condition of the eye at rest, or in a state of repose, or under the physiological effect of a cycloplegic. I do not believe there is a man present who has the idea that he can really refract a patient without the use of a cycloplegic. You, of course, know that I am not speaking of presbyopes. In

my opinion, the oculist who does not use a cycloplegic, the retinoscope, and who does not keep in mind the laws of optics and physics, should be classed simply as an optician and not be encouraged to do refraction.

When we consider the many different errors of refraction, the many troublesome symptoms that are directly due to these errors, obscure nervous symptoms, headache, dizziness, nausea and vomiting, indigestion, etc., we realize that to successfully deal with these is no simple matter.

Our friend in general practice has referred his case to you for examination and refraction, and he is depending upon you for results. If you take enough time and do conscientious work, your results are usually satisfactory to all parties interested; but if, on the other hand, you are one of those who need only ten or fifteen minutes' time, a test card, and a few spheres and cylinders, I dare say your results are not very satisfactory to any one concerned, and yours is the patient who has to have his glasses changed every two or three months, until finally he becomes disgusted with you and goes to a real refractionist and has his trouble corrected.

My motive in writing a paper on this subject was not to lecture you or to teach you how to do any particular part of your work, but to bring a few salient facts to your attention and impress upon you the importance of careful, conscientious, scientific work, if we hope to retain the confidence of our friends in general practice and obtain the best results for our patients.

Most of you will agree with me, I am sure, that refraction is a very important part of our work, and that, if the best results are obtained, it takes time and patience, especially if you are dealing with children or the illiterate, and it is with the little ones that some of the most pleasing results are obtained.

Take, for instance, a child of two to five years of age, with a common concomitant convergent strabismus or internal squint, and carefully refract it and give it the proper management, and watch the result. You will find that, with proper management, you will not only correct the deformity, but will restore the vision in the crossed eye. That a crossed eye loses its function after a time from nonuse is a fact that an ordinary doctor does not appreciate, and to restore its function and correct the deformity by a non-surgical procedure is easily accomplished if you

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

see the child early enough and have the thorough coöperation of the parents.

These cases of squint are among the most interesting ones the oculist is called upon to treat, and I wish to call your attention right here to the essentials of the etiology and explain to you what I mean by the proper management of these cases.

According to the best teaching, two factors are responsible for the squint, and they may act together or singly. First, almost all of these children are far-sighted; the scleral axis is too short or the cornea is too flat, causing the rays of light to focus behind the retina; and this causes indistinct vision unless the patient can add to his refraction, by means of the accommodation, sufficient to cause the rays of light to focus at the macula. He can do this by excess stimulus over the third nerve, which supplies the muscles of accommodation; and his intuitive desire for clear vision causes him to do so. Now, since the third nerve also supplies stimulus to the converging muscles, and the stimuli for accommodation and convergence are synchronous, an excess also goes to the convergers. In the normal eye neither accommodation nor convergence are required for distance fixation, and for nearer points the amount of stimulus for each corresponds with the other. But, in the far-sighted, stimulus is necessary to the accommodation for distance fixation where no convergence is required, and at nearer points the stimulus for accommodation is always more than is necessary for convergence.

The chief function of the eye being clear vision, the accommodation element of the stimulus predominates, and too much stimulus is given to the convergence, which would cause all hyperopes to be cross-eyed, were it not for the fact that the patient is able to compensate for the excess of convergence by sending as much excess stimulus over the sixth nerve to the external rectus muscle as there is excess convergence, and in this way keep the optic axis of the two eyes parallel. Or the patient may separate the two stimuli and converge less than he accommodates. In one of these ways most far-sighted patients succeed in keeping the optic axis parallel or properly converged; but a great many do not succeed, and squint is the result. Second, in some cases the squint is due to a deficient effort at compensating for an overstimulus of the convergence in

hyperopia, because the fusion sense, which presides over binocular single vision, recognizing any failure of the two images to occupy identical points in the two maculas, accomplishing something that nothing mechanical could possibly accomplish, is slow of development or is arrested; and hence the deficient effort at compensating for the overstimulus of the convergence, which results in a squint. So much for the etiology of common convergent squint.

Now, in regard to the proper management of these cases, I wish to call your attention to a method which I have employed in a good many cases and one with which, doubtless, you are familiar.

As before stated, most of these children are far-sighted, and to correct this condition removes the chief cause of the squint, and is, therefore, of the greatest importance.

The cure of the amblyopia, which is always present in a greater or less degree, depending on the duration of the squint, is best accomplished by occlusion of the good eye, and thereby forcing the squinting eye into action. Occlusion is best accomplished by a highly concave, neutral, frosted lens, fitted closely over the good eye, while the proper correction is worn on the amblyopic eye. This frosted lens should be worn constantly until the visual acuity is 20-30 or better, when both eyes are glassed with the proper correction. The absolute, thorough coöperation of the mother is essential in the treatment of these cases if the best results are obtained. The child will have to be watched very closely for a week or ten days, after which time he becomes accustomed to using the amblyopic eye, and the improvement is very noticeable from then on.

This class of cases is only one among a great many where the thorough knowledge of the cause and effect is absolutely essential if the patient is to derive much benefit from the treatment.

I would not attempt to call your attention to all the reasons why your patients should go to an oculist for refraction; they are obvious to most of you; but I do want to impress upon you gentlemen in general practice the fact that it is your duty to advise your patients as to the importance of careful scientific examination of the eyes and be in position to tell them just where to go for such an examination.

DISCUSSION ON THE PAPER OF DR. POTTER.

DR. O. DULANEY, Dyersburg: On account of the limited time for discussion, one cannot take up the many points in regard to refraction work. One of the chief methods of advertisement for the optician is headache, and opticians advertise to the laity that all headaches are caused by refractive errors, and they prescribe for any and all headaches by giving people glasses. I want to say this: In the field of ophthalmology a man has to be exceedingly careful—must go into the history of each and every case before prescribing glasses for the relief of headache, because there are so many functional disturbances, and especially toxemias and metastatic infections that cause headaches. In many, many cases the surgeon and gynecologist come in contact with headaches from infections of the gall bladder and the uterus and things of that kind, and unless the oculist is careful he will make a diagnosis of some refractive error only and be misled. The majority of cases, on reaching the age of forty, nearly always require glasses for reading. But the principal object or point of my discussion is this: that the optician gets his cases from the fact of advertising a cure for headache; and if the people are referred to oculists, they can find out if they have a functional disturbance that is causing the headache; and the optician misleads, refracts them, puts them to a lot of expense, and causes a good deal of discouragement along the line of refractive work.

DR. TOM A. WILLIAMS, Washington, D. C.: I am particularly glad to hear an ophthalmologist make the remarks that have been made, because, as a rule, the average ophthalmologist is fond of making remarks that all functional headaches can be cured by refracting the eyes.

Only last summer an ophthalmologist in a state society not far from here made that remark; and I had occasion to get up and point out as a neurologist how many cases I have had to see that have been carefully refracted by the best men in the country for headache without any benefit to the headache at all, which afterwards were cured by attention to the factors to which the last speaker referred. If ophthalmologists, who are supposed to understand very well that to which they devote their attention, go about trying to teach fellow-practitioners that almost all headaches are due to refractive errors, we cannot blame the advertising oculist for taking up that cry and saying that learned ophthalmologists say that all functional headaches are due to eyestrain, which can be relieved by them at far less expense than by the learned ophthalmologists. Those of us who are not engaged in ophthalmological work should try to make our ophthalmological brethren try and measure the two and not make the sweeping or extreme statement that all functional headaches are curable by rectifying errors of refraction. We all know that a great many headaches are due to errors of refraction; but we need to teach the ophthalmologist that there are a great many cases that are not due to errors of refraction and are due to medical, neurological, or surgical and gynecological conditions, which can

be rectified in other ways. (See A. M. A., Detroit session, Section 1, Neurology, "Pathogenesis of Migraine," 1916.)

DR. EDWIN L. ROBERTS, Nashville: I do not think there has been any more practical paper brought before this association than the one just presented. In answer to the question, "Why go to the oculist for errors of refraction?" I would say: Go to him because he is the only one who can refract with certainty and accuracy. I would go to him for an error of refraction just as I would go to the internist to be treated for pneumonia instead of going to a druggist. I can tell a druggist that I am sick, and he can send remedies, and does undoubtedly treat more patients than some doctors, I am sorry to say. I would go to an oculist for the correction of an error of refraction for the same reason that I would go to a surgeon rather than to a butcher to be operated on for appendicitis. The surgeon knows his business. That is why I would go to an oculist for refraction work—he knows his business.

As to the statement made by Dr. Jones, I think he is going a little too far in saying that it is not for the correction of vision that a patient should go to an oculist. Glasses are worn for two reasons—to make the patient see more distinctly and to make him see more comfortably. Dr. Jones says the patient should go to the oculist for the correction of those little errors of refraction that cause annoying symptoms, but do not materially reduce vision, while it is not necessary for him to go for the correction of such great errors of refraction as seriously reduce visual acuity. I admit that some one other than the oculist may, in a large measure, correct these greater visual defects; but in so doing he will probably, as Dr. Jones himself says, produce the very annoying symptoms for which the doctor says patients should go to the oculist. Then is it not a logical conclusion that a person should go to the oculist first, no matter whether his condition be one in which acuity of vision is seriously involved or one in which annoying symptoms only are present?

In regard to the mistakes of the optician, some years ago I refracted the son of one of the leading internists in Nashville; and I found he had to wear a cylinder, and that in an oblique position, the top of the cylinder being turned in. After he had worn the glasses a year or two with comfort, he had the misfortune of breaking the frame, and instead of bringing it back to me he took it to an optician to have it soldered; and to do this it was necessary to take the lenses out. The optician took the lenses out; and, in putting them back, instead of turning them with the top in, he turned them with the top out. The patient could not wear the glasses, and returned to me to see what the trouble was. I looked at the glasses, and found the optician had turned the axis at right angles to what it should be. I told the young man to have them changed. He went back to the optician and told him the circumstances, and the optician said: "All right, I will change them." He took the glasses and pretended to make a change. When I saw the young man a few days later and asked him about his glasses, he still could not wear them. He went to the optician again, and came back to my

office with the same condition. Instead of sending him back to the optician again, I wrote a prescription to have the lenses put in right and sent him to the wholesale manufacturer who does my work, and he put the lenses in right, and the young man had no more trouble.

NOTES AND COMMENTS

We need just fourteen names to make it an even sixteen hundred.

Dr. H. W. Qualls, Union City, spent two weeks at the Mayo Clinic in October.

The Journal has received a picture of the beautiful new Morristown General Hospital.

Dr. Shields Abernathy, Memphis, was married on November 10 to Miss Helen Salsbury, also of Memphis.

If just a few 1915 members who should be ashamed of their carelessness would "pay up," we would have the sixteen hundred.

Dr. J. M. Lee has opened an office at 349 Doctors' Building, Nashville. Dr. Lee will devote himself to the practice of children's diseases exclusively.

Davidson County reported nine names during October; Dyer County, one; Hamilton three; Hardeman, one; Obion, one; Shelby, four; Weakley, one.

Drs. W. A. Howard and Z. L. Shipley, of Cookeville, and Dr. C. D. Robbins, of Gordonsville, have been attending clinics in Chicago for several weeks.

There are county medical societies in Tennessee whose entire membership is reported on or before January 1 of each year, and they are alive all the year through, too.

The Barbara Louis Hospital, opened in May at Clarksville, has had most encouraging support, and is giving splendid service to the people and the profession of Montgomery County.

The Chattanooga Academy of Medicine and Hamilton County Medical Society reports show that weekly meetings are well attended, and that good work is being done all along the line.

Don't pop up and nominate the first man you think of for Secretary. Pick out one who you know believes in the value of medical organization and who will work—work on you and all the rest.

The Texas Medical News, after a career of twenty-five years, will hereafter be known as "Medical Insurance and Health Conservation," and will take the nation for its field. Dr. M. M. Smith will continue his long service by becoming managing editor of the new publication.

The Journal has been asked to insert the following: "Wanted—To know why the County Medical Society of a prosperous county, with a prosperous city, located on the Cumberland River, about sixty miles below Nashville, has not had a meeting for several months."

Erlanger Hospital, Chattanooga, has received a gift of \$5,000 from Mr. G. I. Alden, of Worcester, Mass. The gift of Mr. Alden is an expression of his gratitude for the kind and careful treatment accorded his nephew while in Erlanger as a patient of Dr. J. H. Atlee.

The following Nashville physicians are in offices in the new Doctors' Building on Church Street and Polk Avenue: Drs. J. A. Witherspoon, W. C. Dixon, Jack Witherspoon, W. H. Witt, Owsley Manier, R. W. Billington, W. A. Bryan, O. N. Bryan, T. G. Pollard, O. H. Wilson, A. W. Harris, Herschell Ezell, J. M. Lee, W. D. Haggard, W. O. Floyd, F. B. Dunklin, D. R. Pickens, W. A. Oughterson, C. E. Brush, Herman Spitz, Eugene Orr, M. C. McGannon, George Williamson, J. M. King, L. W. Edwards, L. M. Lanier, N. C. Leonard, and T. A. Leonard.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

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NOVEMBER, 1916

EDITORIALS

THE JOURNAL'S NEW ADDRESS.

The office of the Journal of the Tennessee State Medical Association is now in Suite 349, Doctors' Building, Church Street and Polk Avenue, Nashville, Tenn. Come to see us!

MEMBERSHIP LAPSES.

It will be only a short time until our various county societies will be selecting officers for 1917 and perfecting plans for the service of these organizations for another year. The Secretaries will be called upon for their reports to the State Association. It is to be hoped that every member whose name is now enrolled will be on hand when his county society meets for 1917 organization, and that all membership dues will be paid into the hands of the various county secretaries at that time.

Every year a number of lapses in membership occur because members are slow in paying dues. All dues should be paid in by January 1 of each year. Failure of our members to pay dues promptly makes unnecessary work for all officers from the county secretaries on up to the officers of our national organization. Not only so, but this laxness works powerfully against the building up of strong local and state societies. If the names that were dropped from 1915 were now enrolled, our state membership would now embrace about 1,800 Tennessee physicians. Some of those who allowed their membership to lapse are among the very best men in the state. They are of the kind who should most appreciate the value of medical organization, and who should be of greatest value to their county and state societies.

Let every member be present at the Decem-

ber and January meetings of our county societies. Select good men for officers, pay 1917 dues, take a vow to help move things along, and let us make organized medicine in Tennessee the power for good that it should be.

ANOTHER COUNTY SOCIETY.

The Cocke County Medical Society has been organized and will become affiliated with the Tennessee State Medical Association at the beginning of the new year. There is a place open for this new society, and it will be most heartily welcomed into the state organization. There are lots of doctors in Cocke County, and lots of good ones. They formerly maintained a county organization and had no business to let it go to pieces; but they are coming back, and, we hope, to stay. The Journal extends greetings and hearty good wishes to the Cocke County Medical Society and to its individual members. May the society live and prosper, that it may help and bless its members, and so serve to promote the aims of organized medicine in Tennessee!

WORKMEN'S COMPENSATION— HEALTH INSURANCE.

Workmen's compensation laws have been enacted in thirty-four states. Tennessee is "conservative," and does not take up new things like some of her sister states; but workmen's compensation will finally come in Tennessee, too. Workmen's compensation is but the forerunner of health insurance for wage earners. The two classes who will be most affected by the operation of workmen's compensation and health insurance laws are wage earners and doctors.

The Journal of the A. M. A. of June 17, 1916, contains the report of the Committee on Social Insurance, a most exhaustive study of the subject. The U. S. P. H. Service has published the work of Surgeon B. S. Warren and other competent men in the service who have devoted a great deal of time to the study of social insurance. The American Association for Labor Legislation, New York, N. Y., has issued pamphlets presenting the

labor views on this subject. The Judicial Council of the A. M. A. made a most thorough investigation into studies of social insurance in 1915, and made a magnificent report to the House of Delegates. All of these studies are in print and can be secured by any physician who will take the trouble to send for them.

Even a squirrel knows enough to get ready for the coming winter. The medical profession of Tennessee should know enough about social insurance to be in position to protect its own interests when the time comes for the passing of laws on the subject.

DEPARTMENT OF PUBLIC HEALTH IN UNIVERSITY MEDICAL SCHOOL.

The University of Tennessee College of Medicine began the work of the present year on September 23, and reports which have come to the Journal are to the effect that all prospects are favorable.

A new department established this year is the Department of Public Health, under the direction of Dr. Frank Maltaner, Leland Stanford, 1912. Dr. Maltaner, since his graduation, has been engaged in public health work in Ohio, and is eminently fitted for the place he occupies. The aim of the University College of Medicine in creating this new department is to serve the whole state in public health matters. Not only will a course be given to undergraduate students, but county health officers will be offered instruction free of cost, and all possible coöperation will be given to the State Board of Health. One important arrangement has already been concluded whereby any physician in West Tennessee may send his material for microscopic diagnosis to the State Board of Health direct to the branch laboratory at the University College of Medicine at Memphis. In this way the Department of Public Health of the University of Tennessee will render most valuable service to the physicians of West Tennessee and, through them, to the people.

The Journal congratulates the University of Tennessee upon its progressiveness and upon its appreciation of the real function of a university. Our health officers in the state should take full advantage of the opportunity

offered them to secure helpful instruction, and the profession generally should applaud the advanced step taken by the University College of Medicine in establishing the Department of Public Health.

SANITARY ENGINEER FOR THE STATE.

A health department which is not supplied with the services of a competent engineer is not what a health department ought to be. It is not possible to any man to have embodied in himself all the qualities and to have stored in his brain all the knowledge that must be had to properly direct the many operations which should be carried out by an efficient and modern public health department. Nor is it possible for any group of men to effectively carry on the many lines of work which an up-to-date health department should conduct, unless the one and the other of them are trained for the one and the other duty. Many of the problems which confront the Tennessee State Board of Health are of a kind which need the skill and the knowledge of an engineer for their solution. The proper supervision of public water supplies is a most important function of the state, and can be had only through the service of an engineer. The cities of the state can take care of their own inside water-supply problems, but in doing this they are prone to create conditions dangerous to other smaller communities. An engineer for our State Board of Health could render great service to the smaller towns and to communities too weak to obtain for themselves expert advice. There are towns in Tennessee which want to build sewers, but, because of the expense attached to securing proper plans, cannot undertake the work.

There are many ways in which the service of a sanitary engineer can be utilized to great advantage, and the suggestion that the State Board of Health should be provided with such officer is not new. The present Secretary of the Board, Dr. Lillard, has been so impressed with the urgency of the demand for an engineer that he has gone about putting into motion the machinery for getting one. Dr. Lillard will ask the Legislature at its next sitting to provide the State Board of Health

with a State Sanitary Engineer. He has already received assurances of support in his efforts to this end from several powerful scientific and commercial organizations in the state. The Journal would ask its readers to do what they can to help in this matter. Why should Tennessee not have for its health department what has been found helpful in the work of other state health departments? Our people are worth saving just as much as are those of other states. Let the State Board of Health be put in position to do its part in saving them.

VITAL STATISTICS IN TENNESSEE.

In 1913 the "model" vital statistics law was passed by our Legislature. The Bureau of Vital Statistics of the State Board of Health was organized during that year, with Dr. H. H. Shoulders as Registrar. With the coming of 1914, registration of births and deaths was begun, and the results of the first year's operations of the Bureau of Vital Statistics were most gratifying, especially as regarded the numbers of births and deaths registered. In 1915 improvement was made, not only in the matter of increased registration, but also in completeness of certificates. For the year 1916 further improvement in all particulars has been noted, more than eight hundred death certificates having been recorded for the first six months of the year than were returned during the corresponding period of 1915, and a most gratifying improvement having been noted in the character of certificates.

At an early date the Bureau of Census at Washington will have a representative in Nashville to make investigation into the operations of our vital statistics law. The admission of Tennessee into the "registration area" of the United States will be an assured fact if the outcome of this investigation is what is hoped for. While the mere admission of the state into the registration area will not help much toward the reduction of death rate, and is not absolutely necessary to progress in public health work, still it is a thing much to be desired. It will show that the men in charge of the administration of public health affairs are men who want to move forward,

and it will show that the medical profession of the state is alive to its privileges and to its duties to the public.

The doctors of Tennessee have done well in making the success of the Bureau of Vital Statistics what it has been and what it is. There are some who have hung back and some others who have positively refused their coöperation, but the great bulk of the profession in the state have been reasonably prompt and careful in signing death certificates and in returning certificates of birth. A constantly decreasing number still quarrel a little over the fact that they are not paid a trifle for signing certificates, and a constantly increasing number seem to recognize their duty to their patients and to the public, and appear to perform this smaller task most gladly. They may be sure that their coöperation is duly appreciated by those who are trying to serve the state through their efforts to increase the efficiency of its public health department, and that the time will come when the public will recognize with gratitude the value of the service they have rendered.

While death and birth registration is far more perfect than many thought it would be after only two years and a half of the operation of the vital statistics law, and while it is believed that ninety per cent or more of all deaths are now being registered, there is still some room for improvement in the character of certificates and in the matter of promptness in reporting births. If the physicians will exercise just a little more care in assigning cause for death, using correct terms and making specific statements, and in giving, as far as they can, all the information asked for on the certificates, then the Bureau of Vital Statistics will indeed be a most valuable source of information to the profession, a power for the protection of individual and public rights, and an institution of great credit to the state.

It is not enough to assign "cancer" as a cause of death. Put it "cancer of the breast," or of the jaw, or of whatever part or organ was diseased. If a baby with whooping cough contracts pneumonia and dies, do not neglect to give both the direct and the contributing cause of death when the death certificate is signed. If violence of some nature

caused death, state whether it was accidental, indicating the nature of the accidents or homicidal. Try to make the death certificate as complete as possible, to the end that it may serve every purpose for which it is intended. Every physician in Tennessee whose name and address could be had has received at least two copies of the little book issued by the Bureau of Census, which gives the accepted nomenclature for causes of death. If any have not received this book, it may be had for the asking.

The records of the Bureau of Vital Statistics are valuable indeed. This is proved by the fact that now, for the first time, we are in position to know definitely what diseases are killing our people, and to know what headway is being made against them; to know where to apply effort for the prevention of disease; to know what information will be helpful to the people and to give them the information in dependable shape. Daily demands are made upon the Bureau for death or birth certificates to be used as evidence in the courts of the country; and upon the facts established by these certificates, important questions affecting not only individuals, but also the whole people, are settled. Because they are doctors the men of the medical profession in Tennessee have the privilege of rendering to the state the service, great indeed in its entirety, but relatively small in the individual task, which is done in properly and promptly making out and returning death and birth certificates. They have done well thus far, and our faith is that they will do even better in the future, for the history of Tennessee medicine shows that this has always been their way of doing things.

Do you wash your face carefully, and then use a common roller towel?

Do you swat the fly, and then maintain a pile of garbage in the back yard?

Do you believe in national preparedness, and then fail to keep yourself physically fit?

Do you go to the drug store to buy a toothbrush, and then handle the entire stock to see if the bristles are right?

SOCIETY PROCEEDINGS

OBION COUNTY.

The October meeting of the Obion County Medical Society was the best-attended meeting of the year. Reelfoot Lake fish and many other good things must have helped. About twenty doctors were present. The doctors' wives also came to this outing meeting of the society, and looked so handsome and so happy that one who did not know would never have imagined that they were doctors' wives. An especially welcome guest was Dr. L. W. Haskell, of Memphis, who read the paper of the day, on "Acute Conditions in the Abdomen"—a very fine paper. Dr. J. B. Havener, of Troy, was to have had a paper for this meeting, but was unavoidably absent.

J. D. CARLETON,
Secretary.

EAST TENNESSEE MEDICAL ASSOCIATION.

One hundred and twenty East Tennessee doctors were actually registered at the Jefferson City meeting of the East Tennessee Medical Association on October 12, 13. The large attendance and a good programme, together with the most delightful hospitality of the Jefferson County profession, made this the very best meeting on record. Drs. J. W. Jobling and E. M. Sanders, of Nashville, were the invited guests, and contributed very valuable papers. Officers were elected as follows: President, Dr. B. M. Tittsworth, Jefferson City; Vice Presidents, Dr. T. D. Cloyd, Mosheim, and Dr. B. W. Bagwell, Madisonville; Secretary-Treasurer, Dr. W. N. Lynn, Knoxville. The spring meeting will be held in Dayton in May.

The members of the East Tennessee Association are of the best men of the profession in the thirty-four counties of the Eastern section, and are making this society a strong organization.

HENDERSON COUNTY.

The Henderson County Medical Society held its regular meeting October 10. The meeting was called to order by Dr. J. H. England. The

minutes of the previous meeting were read and approved.

The society then went into the election of officers for the ensuing year. The following men were elected: Dr. W. I. Howell was elected President by acclamation; Dr. J. P. Joyce was elected First Vice President by acclamation; Dr. J. H. England was elected Second Vice President; Dr. C. E. Bolen was elected Delegate to the State Medical Society, which meets in Nashville in the early part of April; Dr. G. A. Brandon was elected Alternate; Drs. Huntsman, Arnold, and Davidson were elected Censors for 1917; Dr. S. T. Parker was elected Secretary, for the fifth time, by acclamation.

Speeches for the good of the society were made by Drs. Bolen, Boyd, Keeton, Stinson, and others, after which the society retired to the Scott Café, where an elaborate dinner was served to twenty members. A rising vote of thanks was given to the Scott Café for the excellent dinner and the kind and courteous treatment given each one present, as is characteristic of both members of the firm.

In the afternoon session the following doctors reported cases: Drs. McMillan, Wylie, Bolen, Stinson, and Johnston.

The day was very pleasantly and profitably spent, and the society begins the new year with flattering prospects. Henderson County is known throughout the state as having the best-organized society and most loyal physicians in the state. Papers for next meeting by Drs. Wylie, Brandon, Stinson, and Huntsman.

SAMUEL T. PARKER,
Secretary.

MEETING OF THE MEMPHIS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

SEPTEMBER 12, 1916.

(Dr. Fontaine Moore in the Chair.)

QUININE AMBLYOPIA.

Dr. Louis Levy presents Mr. G. C. B., who gives the following history: About seven months ago took almost a half ounce of quinine, mistaking same for epsom salts. First noticed blindness about three o'clock in the

morning following the taking of same. For three days could see absolutely nothing, not even light. After this, vision gradually returned until he was seeing very well, although everything looked smoky. About the latter part of June vision again failed until he had perception of light. Upon examination I found dilated pupils, which did not react to light. The ophthalmic findings at the same time were as follows: Both discs very pale, vessels small, with colloid excrescences found in elderly people. He was given the following treatment: Strychnine 1-30 gr. t. i. d., amyl nitrite inhalation, and general elimination. On August 31 the blood vessels seemed larger, the discs not as pale. Vision, however, remains the same.

Dr. Levy would like to hear suggestions from the members as to anything else that could possibly be done to bring vision up.

Dr. Simpson had seen a similar case with no improvement. Patient, however, had slight vision left. He could not improve upon treatment already used.

Dr. Hooker saw case not quite as bad as one presented, in which vision with treatment improved.

Dr. Levy reported the following case: I was called to see Mr. N. H., of Woodstock, Tenn., who was in a local sanitarium, being treated for malarial fever, æstivo-autumnal type, with hematuria. He had been taking ninety grains of quinine per day before blindness came on. Blindness first noticed upon waking August 21, and continued until noon of the 22d, when he could make out fingers at one foot. Pupils dilated, but react to light. The ophthalmic findings: Fundus anemic blood vessels small, and general pallor over disc. Treatment: Amyl nitrite inhalations strychnine sulphate 1-30 gr. t. i. d., electric massage over temples and head kept lowered as much as possible, general elimination August 23d: Fundus better, vessels filling out and vision, fingers fourteen feet. Field of vision, taken with a pencil, practically normal. Still complaining of the fog. August 24th Fog not as great; can see over entire room vision seems clearer. Patient left for home on the following day, and up until yesterday was doing well.

IMPAIRED VISION DUE TO CONCUSSION.

Dr. J. J. Shea presented J. W. M., aged twenty-five. Three weeks ago patient was in a room in which a compressed tank exploded, but was not struck by any of the flying particles. The lids became swollen and the conjunctiva deeply injected. Upon examination the vision was reduced to fingers at ten feet. The pupil was dilated and the vitreous found to be clear and the fundus normal, the disc normal. One week later, under rest and atropine, the vision was 15-50. Two weeks later the vision was 15-24.

The interest in the case is the fact of an injury caused by concussion without any apparent trauma of the ball or any defect as seen by the ophthalmoscope.

Dr. Howard thinks case one of lues. Thinks loss of vision due to this. Discs normal. Vessels large. White line upon arteries typical of syphilis and easily seen in negro.

Dr. Farrington asked Dr. Howard to explain improvement in vision without syphilitic treatment.

Dr. Blue: Fundus shows no trouble, and thinks, with Dr. Shea, due to concussion.

Dr. Shea, in closing, said that he felt sure the diagnosis in this case was the same as the diagnosis made from concussion due to explosion of shells that we read so much of now during the war.

TRAUMATIC RETINAL HEMORRHAGE.

Dr. Robert Fagin presented boy, aged thirteen, who complained of blurred vision and a "black spot" before the right eye. The boy gave very little history, except that he and his parents were absolutely certain that the blurred vision was of recent origin.

This eye, from outside appearance, showed no change, yet at the test case the vision was reduced to fingers at three feet. Vision in the left eye was up to standard. There was no improvement in vision in either eye with a glass. Perimeter showed central scotoma in right eye, with normal peripheral fields. Pupils dilated. In macular region of right fundus a good-sized retinal hemorrhage is seen; optic disc is very much blurred, and there is a whitish area between macular and disc; vessels obliterated. Patient was sent to family physician, who took blood pressure, ex-

amined urine, made Wassermann, and a complete physical. Each test was negative. On inquiry as to trauma, the entire family remembered that two weeks previously, while playing, the eye was struck by the fist of another boy. This patient is presented for examination and diagnosis as to cause. At present there is a slight descemetitis.

Dr. Stanford has seen two cases of injury, both having been struck in the eye, that presented similar appearance, but the diagnosis in these cases was rupture of the retina.

Dr. Moore said there was a marked descemetitis which was not seen originally. What caused it?

Dr. Fagin, in answer to this question, thought the intraocular inflammation was the cause of same. There are no vitreous opacities.

Dr. Simpson said hemorrhage of choroid should be thought of in this case, as it occurs in males, especially young men and boys, without apparent cause. However, is usually more extensive; the increased coagulability of the blood and the danger to closing of the blood vessels by clotting seems to be the cause of hemorrhages in these cases.

Dr. Fagin, in closing, said that when he first saw the boy they gave no history of injury. He first thought it was spontaneous rupture, and wondered why a boy thirteen years old should have hemorrhage.

LOUIS LEVY,
Secretary.

MEETING OF THE MEMPHIS SOCIETY
OF OPHTHALMOLOGY AND
OTOLARYNGOLOGY.

OCTOBER 10, 1916.

(Dr. J. L. Minor in the Chair.)

COLOBOMA OF THE CHOROID.

Dr. Robert Fagin presented Mr. A. D. E., aged forty-five years, who gave the following history: Has noticed lately that for reading he has had to strain his eyes. The vision in the left eye is very poor, and has been for some years. Objects are blurred and indistinct. Upon ophthalmoscopic examination the fundus of right eye is normal; the fundus of the left shows spots of choroiditis and congenital disarrangements of blood vessels, with some pigmentation in places in front of blood

vessels. Vision in this eye is 4-200, unimproved with glass.

Dr. Ellett thought the condition was congenital and is what has been described as the "medusa head" appearance of the nerve. The pigment in some places lies in front of the blood vessels, but one conspicuous lesion between the nerve and the macula is evidently deeper than the retina. While this does not have the appearance of a coloboma of the choroid, it might be something of that nature.

Dr. Fagin, in closing, said that he would try to have a picture made of this fundus, as he had been unable to find anything that looked like it in any work upon the fundus.

Dr. Ellett reported the following cases:

1. Melanotic Sarcoma of the Choroid.

Mrs. J. A. D., aged thirty-five. In the fall of 1911 she discovered that her right eye was practically blind. In March, 1912, I found vision in that eye was ability to see moving objects. The note of the eye ground was as follows: "O. D. Macula chorio-retinitis. The lesions are bright yellowish white, mostly one vessel in diameter, with two larger ones. All are sharply defined. No pigment." I did not see the patient again for two years, when the following note was made: "O. D. A localized retinal detachment covers the nerve head and extends up, out, and down. Normal retina can be seen all around it. The detached area is about 4 dd. in size, and the top is seen with +12. General fundus emmetropic. Retinal detachment below. Pupil normal. There are no visible choroidal spots, but below the mass described a few faintly striated shimmering areas, probably retinal folds. Tension 17 (Gradle). A diagnosis of tumor was made. A month later the growth was 14 D. in height. Advised enucleation. February 13, 1914: Saw Dr. Casey Wood, of Chicago, who agreed as to diagnosis and treatment. He spoke of the normal tension as unusual. The eye was removed February 14, and a pigmented tumor found occupying one-fourth of the vitreous chamber. Sections were shown, the growth being a melanotic sarcoma. There has been no recurrence to date.

2. Melanotic Sarcoma of the Choroid. Probable Abdominal Metastasis After Sixteen Years.

Miss E. M., aged forty-three years, was seen December 10, 1900. Six months previously the vision in the right eye had failed, and she consulted an optician, who told her that glasses would cure her and it was not necessary to consult a physician. The vision of the eye was 15-200. There was a slight enlargement of the anterior ciliary veins, and nothing else abnormal externally. The left eye was, and has remained, normal. In the right eye ground a whitish swelling was seen down and out from the disc and one disc diameter from it, projecting forward 7 D. It was three disc diameters wide, and around it the retina was wrinkled; nerve and vessels normal, tension normal. She had been seen by a physician in Illinois in September, 1900, and a letter from him gave the findings as at my visit. The mass continued to get larger, and by March, 1901, the retinal detachment extended to the disc. Dr. J. L. Minor saw the case at this time, and was not sure that it was a tumor, largely on account of the normal tension. June, 1901: The detached retina overlaps the disc like a bleb, and extends from the upper temporal to the lower nasal vessels and as far outward as one can see. The top is seen with +12. The field shows a large central scotoma. Vision 4-200. September 11: Pupil no longer reacts. March, 1902: The retina is completely detached, except the upper and inner quadrant. Separate areas of detachment down and in and out. Is under another physician's care. June 7: Tension +1. Eye injected and some pain. July 2: Pronounced glaucoma. July 4, 1902: Saw the case in consultation with the attendant, and advised enucleation. He performed it on July 4, 1902.

A section of the eye showed a growth as indicated in the photograph. Microscopic sections showed a spindle-celled sarcoma with some pigmentation. Diagnosis, melanotic sarcoma.

The patient remained well until the summer of 1916, when she was seen by several physicians for some abdominal trouble. One physician diagnosed Bant's disease, and advised splenectomy; another took her history, and is inclined to think the trouble is malignant. The patient is now a devout Christian Scientist.

3. Probable Apoplexy of the Cuneus.

Mrs. E. G. M., aged sixty-seven, was seen by Dr. Farrington in the spring of this year for an affection of the ear, consisting of a soft growth, almost filling the external auditory canal. This was partly removed, very free and prolonged bleeding interfering with a satisfactory removal. (Sections of this growth were presented, showing the mass to be a well-organized polyp.)

About September 8 she had something like a stroke. She was numb all over, especially in the right arm, so dizzy that she could not stand, and was in bed two weeks. She did not lose consciousness. Since getting up the vision of both eyes is dim. Examination showed O. D. 20-80, +1.00 ax 90°=20-40 m. O. S. 20-40. Not improved by glasses.

The pupils were equal and active. There was a considerable nuclear haze in each lens, with a few floaters in the vitreous. Fundus details dim, but apparently normal. The fields show a defect in the upper right-hand quadrant, as shown. General examination shows no abnormality. Blood pressure, 150. Urine, normal. Blood 85 per cent hæmoglobin, 9,500 whites, with 55 per cent polys. Some gastric hyperacidity. From the defect in the field, the lesion, probably hemorrhagic, would seem to be located in the lower 1-3 of the cuneus on the left side.

Dr. Fagin asked Dr. Ellett if he thought case number 2 that he reported was due to metastasis.

Dr. Minor wanted to know if in case 3 Dr. Ellett had also made the light test in the scotoma area.

Dr. Ellett, in closing, said that he had not seen case 2, but that the internist seemed to think so.

In answer to Dr. Minor, he said that the light test was not made.

LOUIS LEVY,
Secretary.

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BOOK REVIEWS

PRACTICAL MEDICINE SERIES. 1916. Vol. IV., Gynecology; Vol. V., Pediatrics and Orthopedic Surgery. The Yearbook Publishers, Chicago.

These two volumes of this splendid and popular series are fully up to the long-established standard, each volume being a very complete review of the literature upon the subject with which it deals.

THE MEDICAL CLINICS OF CHICAGO. Volume 2, Number 2; September, 1916. Bimonthly, by W. B. Saunders Company, Philadelphia. \$8 per year.

This number of the Chicago Clinics is perhaps one of the best which has come out since the publication of the Clinics began. It contains contributions from ten of Chicago's best clinicians, all of them dealing with subjects of present-day interest and all of them carrying instructive lessons, which are forcibly brought out by the various clinicians presenting them.

DISEASES OF THE EYE. By George E. de Schweinitz, M.D., Professor of Ophthalmology in the University of Pennsylvania. Eighth edition, revised and enlarged. W. B. Saunders Company, Philadelphia, 1916.

There is no need for a long review of any standard work such as the book of de Schweinitz is universally given up to be. One word is descriptive of the book and its author—"fine!" Just what the eighth revised edition of de Schweinitz on "Diseases of the Eye" ought to be, that it is. The new that is known is included with the old that has been proven by usage. Especially worthy of note are the chapters on refraction, iritis, the section on the use of Röntgen rays in the localization of foreign bodies, and the inclusion of descriptions of new operative procedures not to be found in other texts.

HOW TO LIVE. Rules for Healthful Living Based on Modern Science. By Irving Fisher, Professor of Political Economy, Yale University, and Eugene Lyman Fisk, M.D., Director of Life Extension Institute. Eighth Edition, Revised. Funk & Wagnalls Company, New York.

This book is designed to spread knowledge of individual hygiene and to further the aims of the Life Extension Institute, under whose auspices it is published. It is doubtful that a better work of its kind has ever been published. The book is full of helpful information presented in a plain, common-sense way, so that an ordinary person may read and understand. There is nothing to frighten and stampede the reader, but much to appeal to his intelligence and to quicken his determination to live right and so protect his own health and the health of his community.

THE CLINICS OF JOHN B. MURPHY. Vol. V., No. 4, August, 1916. Bimonthly by W. B. Saunders Company, Philadelphia.

This number of Murphy's Clinics contains "talks" on more than thirty cases, covering a wide range of subjects, and is full of instructive information, such as is always found in this most valuable periodical. It is futile to try to particularize in a review of this volume—every case discussed carries valuable lessons presented in the inimitable style of the great teacher of surgery, whose recent death brought great sorrow to the whole medical world.

ment of different diseases. When it comes to illustrations, this book at once takes first place. No better photographs have ever been presented in any text on skin, not even excepting the *Dermachrones* by different ones. More *typical* and *valuable* illustrations are shown of a greater number of skin diseases in their various phases than I have ever seen in any one text on dermatology. This alone makes the book the most valuable of all to the general practitioner who has not had opportunity to see these diseases for himself. They are also a joy for the dermatologist. It is an all-around splendid book.

HOWARD KING.

PHARMACOLOGY AND THERAPEUTICS. By H. C. Wood, Jr., M.D., Professor of Pharmacology and Therapeutics in the University of Pennsylvania. Second Edition. J. B. Lippincott Company, Philadelphia, 1916. Cloth, \$4.

This, the second edition of Wood's Pharmacology and Therapeutics, is characterized by the same careful attention to important detail as have been all the works of H. C. Wood—Senior and Junior. The old and the new systems of measures and weights are both used, and the English *mil* has been substituted for the more or less bothersome *c.c.* of the metric system. The newer drugs have been very thoroughly treated and conservative statement adhered to in regard to their value as therapeutic agents. Those substances which are official are given preference throughout. In every respect this work is worthy of commendation. W.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D. C. V. Mosby Company.

The author here presents a work designed to completely cover this branch sufficient for all practical purposes, and yet not too voluminous for even the busiest practitioner. Well, indeed, has he accomplished this end. The arrangement and system is not unlike that of most modern authorities on this branch. On the fundamentals he gives ample space even for the careful student, yet not enough to be tiresome. The chapter on "Distribution and Type of Eruption as Diagnostic Factors" is a well-arranged thing and of especial value for the student. The author shows a wide range of observation and study on pathology, this being one of the strongest features of the work. Many valuable and beautiful microphotographs accompany his descriptions. His descriptions of the gross and histological changes are clear, complete, and to the point. In dealing with etiology, the writer has very wisely left out many tiresome, old-time theories which are unscientific and oftentimes misleading, especially to the student. Treatment has been given close attention; and here, too, he has wisely stayed away from the multiplicity of remedies given by some men. The chapter on X ray and radium might have been more extensive for present-day purposes, yet the main practical points about the application of these remedies are brought out under the treat-

CHILDREN'S TEETH.

A recent investigation made by the United States Public Health Service in connection with studies of rural school children showed that 49.3 per cent had defective teeth, 21.1 per cent had two or more missing teeth, and only 16.9 per cent had had dental attention. Over 14 per cent never used a toothbrush, 58.2 per cent used one occasionally, and only 27.4 per cent used one daily. Defective teeth reduce physical efficiency. Dirty, suppurating, snaggle-toothed mouths are responsible for many cases of heart disease, rheumatism, and other chronic affections. The children are not responsible for the neglected state of their teeth. The ignorant and careless parent is to blame for this condition—a condition which hampers mental and physical growth and puts a permanent handicap on our future citizens. School-teachers can do, and are doing, much in inculcating habits of personal cleanliness on the rural school child; but this will fail of the highest accomplishment unless parents coöperate heartily and continuously. This is a duty which we owe our children.—*Health News, U. S. P. H. Service.*

The last Congress enacted legislation which will provide for about three hundred additional medical officers in the Medical Corps of the United States Navy. Applicants must be between the ages of twenty-one and thirty-two, citizens of the United States, and must submit satisfactory evidence of preliminary and medical education. Pay ranges from \$2,000 to \$8,000, with allowances, depending upon rank. Full information may be had by writing Surgeon General, United States Navy, Washington.

The hand that carries food to the mouth can also carry disease germs.

THE JOURNAL

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NUMBER 8

UTERINE HEMORRHAGE.

SOME REASONS WHY A THOROUGH PELVIC AND GENERAL EXAMINATION IS IMPERATIVELY DEMANDED IN ALL CASES OF HEMORRHAGE FROM THE UTERUS OUT OF ORDER.*

BY FRANK D. SMYTHE, M.D., F.A.C.S.,

Memphis, Tenn.

Uterine hemorrhage consists of an excessive amount of blood loss during menstruation, the loss of blood from the uterus having no connection with the function of menstruation. The presence of blood between the periods, whether much or little, constitutes a hemorrhage from the uterus.

Hemorrhage from the uterus is a symptom very frequently encountered by the physician, and the cause of the hemorrhage may be pathology located in the pelvis, or it may be constitutional in nature and depend upon organic changes or functional disturbances. I find from a review of my case records that in the majority of married and parous women experiencing blood loss from the uterus the cause of the hemorrhage is located in the pelvis. In the virgin it is very much more frequently of constitutional origin. This is especially true in young women.

My object in presenting a paper to this association on the subject of uterine hemorrhage is to bring out, if possible, the importance of recognizing the cause of the hemorrhage in a given case in order that the patient may be given the advantage of rational treatment without delay, and delay in applying the proper remedy proves disastrous in a very large number of cases; and

not a few are denied a chance for life where a prescription is given for a symptom, the physician failing to make an examination to determine the cause of the symptom.

The most usual local causes of menorrhagia in the virgin are:

1. Congestive endometritis.
2. Uterine myomata.
3. Malpositions, especially retrodisplacements.
4. Tuberculosis of the tubes and uterus.
5. Diseases of the ovaries, especially cysts of moderate size, with torsion of pedicle.

In the married and parous patient, in addition to the above, are:

1. Subinvolution.
2. Metritis.
3. Purulent salpingitis.
4. Carcinoma and sarcoma *very rarely* responsible for hemorrhage, limited to the menstrual period.

The constitutional conditions dependent upon organic lesions situated outside of the pelvis resulting in menorrhagia are, in the order of importance and frequency, as follows:

(a) Organic disease of the heart, especially mitral lesions.

(b) Cirrhosis of the liver.

(c) Meritis.

(d) Tuberculosis, general, rarely the cause in the absence of involvement of the uterus. Generally speaking, patients with tuberculosis have scanty menstruation or amenorrhea.

METRRORRHAGIA.

Metrorrhagia is hemorrhage from the uterus, having no connection with the menstrual period; and the pathology responsible for the hemorrhage is local, such as:

- (a) Abortion, complete and incomplete.

*Read at the meeting of the West Tennessee Medical and Surgical Association, May, 1916.

- (b) Endometritis, especially gonorrheal.
- (c) Uterine myomata—submucous and interstitial neoplasms encroaching upon the endometrium.
- (d) Carcinomata—cervicis uteri.
- (e) Carcinomata—corpus uteri.
- (f) Extra-uterine pregnancy.
- (g) Arteriosclerosis—chorioepitheliomata.
- (h) The latter should be suspected in cases of

persistent hemorrhage following expulsion of a mole and abortions or after delivery at term. Should hemorrhage recur some days after cessation of the normal lochia, such a case should be curetted without delay and scrapings submitted to a pathologist for examination and report. Should the report reveal syncytial cells, hysterectomy should be performed without delay, as this variety of malignant disease is, of all forms of cancer, the most rapid in growth, metastases to distant parts through the blood stream, and becomes a hopeless case soon after its development.

The immense value of complete examination and early diagnosis certainly cannot be questioned where the symptoms might be due to a disease that, if treated symptomatically, terminates in 100 per cent mortality in the absence of surgical treatment while it is a local affection.

I will not attempt to take up and discuss separately the various conditions surgical in nature having hemorrhage from the uterus as a symptom. It would take up entirely too much time for an occasion of this kind, though each and every cause mentioned deserves special consideration. A book could be written upon the subject.

Uterine myoma is a common offender. Thirty-five per cent of women over forty years of age are affected with uterine myomata. It is of all causes the most commonly responsible for menorrhagia. Large fibroids are rarely overlooked; neither are large fibroids very often responsible for excessive hemorrhage from the uterus. It is the small submucous and interstitial tumors which result in excessive blood loss. Such tumors very frequently do not increase the size of the uterus but little, if any, for a long time; and, because of their location, failure of recognition is common where the ordinary method of conducting an examination only is resorted to. Such cases are frequently curetted, and relief for a while is obtained. Soon, however, the hemorrhage recurs. Medical treatment is continued

because of failure of operation to afford the permanent relief that was expected or promised from surgical treatment. Menorrhagia recurs very soon, the anæmia is progressive, and the patient soon presents an almost bloodless appearance, with hæmoglobin as low at times as 15 per cent. Given a patient with such a history, where positive diagnosis of fibroid cannot be made by its detection upon the surface, the cervical canal should be slowly dilated under ether sufficiently wide to enable the surgeon to introduce a searcher, either a curette or his little finger (the latter preferred), so as to thoroughly explore the uterine cavity, and, if need be, do a hysterotomy so as to eliminate all possibility of doubt as to the presence or absence of a neoplasm.

One would be astonished at the large number of such cases with small myomata—myomata which could not have been detected by the ordinary method of conducting an examination. A carefully conducted, but vigorous, curettement will sometimes suffice, though, generally speaking, unsuccessful ultimately. Myomectomy should be done in young women. Should there be other tumors within the walls of the uterus numerous, whether of good size or not, supra vaginal hysterectomy, including removal of the cervical mucosa, is the operation that should be performed. Such an operation is followed by a radical cure with a minimum of sequellæ.

The temptation to limit our work to the removal of the tumors, when not too large, is very great and is oftentimes a justifiable procedure. However, the surgeon who adopts this method as a routine will be frequently called upon to operate later for a fibroid tumor of the uterus, and only occasionally will he have the supreme satisfaction of being called upon to attend the case at delivery. However, I have had such experience on three different occasions. "A uterus that has grown a fibroid has twenty chances to grow another to one chance of becoming pregnant."

Ovarian cysts of moderate size are more frequently responsible for uterine hemorrhage than is commonly believed, and not so often overlooked as the small uterine myomata; nevertheless, a good-sized ovarian cyst can be present situated low down in the pelvis, without attracting the patient's attention to its presence, and she will continue to suffer from uterine hemorrhage. Should a physician be consulted for relief sought

—cure of the symptom, hemorrhage—who had acquired the habit of prescribing for patients without an examination, the presence of the tumor would continue to remain unsuspected until some one was consulted who would not prescribe for a symptom without making an honest effort to ascertain the responsible cause. I have seen not a few just such cases.

The proper treatment for such a case would be, first, oöphorocystectomy; and, as every surgical case is likewise a medical case, appropriate remedial agents should be administered for the purpose of hastening convalescence and for the accomplishment of such additional alterations in the function of organs as are found necessary in the interest of the patient. Medical treatment, in the absence of removal of the cause, could not prove otherwise than abortive.

Carcinoma of the uterus alone is very seldom the cause of menorrhagia. The victim of cancer of the uterus *may* menstruate to excess. She will, in addition to the excessive menstruation due to the cancer, lose blood between her periods, for the reason that in cancer cases the hemorrhage has as its source of origin the cancer proper. Not so with the affections responsible for excessive loss of blood limited to the period. The blood in menorrhagic cases issues from the endometrium only. Less important, but common, affections resulting in excessive loss during the period—menorrhagia—such as subinvolution and malpositions, by interfering with the pelvic circulation, if permitted to remain untreated too long, result in the development of glandular hypertrophy, overgrowth of connective tissue, and increase in size and number of the glands and blood vessels which, during the catamenia, throw out an excessive quantity of blood liberally mixed with mucus. The treatment of such cases may be simple or complicated, depending upon the pathology present, and will vary in different cases from curettement of the endometrium from the uterus, trachelorrhaphy, perineorrhaphy, or some of the many more or less ingenious operations devised for the cure of retroversion.

Extra-uterine pregnancy is of common occurrence, and hemorrhage always occurs after abortion or rupture; and, without the history of the case, its presence will almost always be overlooked, and a curettement, which operation is positively contraindicated in such cases, advised

for arrest of a hemorrhage, unless you are prepared to do section at the same sitting. I have known of more than one case that terminated in the loss of life from intra-abdominal rupture during the performance of the operation of curettement for a supposedly incomplete abortion—uterogestation. And we do know that few, if any, conditions exist the history of which points so unerringly in the direction of the location of the lesion. Again, the importance of careful examination, which cannot be made without obtaining a history of the case, and from the evidence, is overwhelmingly impressed upon us.

CANCER.

Cancer in the corpus is practically a postclimacteric disease, and is nearly always suspected; while cancer of the cervix occurs much earlier in life, and, as a rule, in healthy women of large families. It is, of all causes of hemorrhage of the uterus, the least suspected by the patient; and many times the physician is too slow to insist upon an examination until the cancer no longer remains a local affection, and, likewise, no longer curable. The disease is so common that every physician engaged in general practice in this country sees on an average of at least one case a year.

ULCERATION OF THE CERVIX.

So-called "ulceration of the cervix" is either a lacerated cervix, with erosion and eversion, or the lesion is malignant, in practically all cases over thirty years of age. Other lesions situated upon the cervix and found in younger women are specific in nature or tubercular, usually specific.

Such lesions are essentially surgical, the former requiring trachelorrhaphy, the latter hysterectomy. These cases are entitled to protection and to proper treatment, and they receive neither where gynecological tinkering and medical treatment is the order of the day for lesions surgical in nature.

Uterine hemorrhage in women thirty-five or forty years of age or over, bleeding more or less persistent or recurring, is not of uncommon occurrence. The cause of hemorrhage in these cases is situated in the uterus, and the treatment indicated is hysterectomy.

Examination of the specimen after removal reveals—

(a) Cancer of the endometrium.

(b) Small myomata uteri.

(c) Arteriosclerosis of the uterine blood vessel.

Valuable time should not be lost in treating a woman medically too long for hemorrhage—certainly not if she has passed the thirty-seventh or fortieth milestone on the pathway of life. Cases with such a history are not amenable to medical treatment. The uterus, as an organ of great value, has at that period of life passed its day of usefulness, performed its important function; and the sooner it is removed when a source of repeated hemorrhage, the better for the patient.

One woman out of every eight living to-day past thirty-five years of age will die of cancer, and one man out of eleven past that age will die of the same disease. The uterus is, of all organs, the most frequent site of primary cancer, and hemorrhage is the first evidence suggestive of its possible existence, and it is in evidence in practically all cases where the disease is local and entirely curable.

Can a duty be more imperative or important than that of the physician to make a searching investigation without needless delay of every woman applying for relief from uterine hemorrhage out of order at any time, and especially during the cancer age—namely, between thirty and fifty? More than half the cases develop between the thirty-fifth and forty-fifth years of age.

DURATION OF CANCER AS A LOCAL DISEASE.

We do not know how long cancer remains a local affection in the human being. It is stated from good authority, however, that it remains local in the Japanese dancing mouse for a period of thirty-nine days. In the human being it probably remains at the site of origin a longer time. We have no positive proof of that statement. Clinical evidence, however, bears it out. *It does not remain a local affection sufficiently long in any case, regardless of its location, to justify a moment's delay, after diagnosis is made, in effecting its entire removal.*

CONCLUSIONS.

1. Uterine hemorrhage is of very common occurrence and is dependent upon a great variety of causes.

2. The cause may be local or general, organic or functional.

3. In the very young the cause is often constitutional in nature, even in the absence of local disturbance.

4. In the married and parous patient uterine hemorrhage is usually of local origin, and the interest of the patient demands that it should be so considered until proven otherwise after a resort to all known and available methods of examination.

5. Hemorrhage from a fibroid tumor has as its starting point the menstrual period, though hemorrhage from a sloughing fibroid or an ulcerating submucous fibroid may occur at any time, in that case simulating hemorrhage from a cancer.

6. *Hemorrhage from cancer of the corpus is invariably postclimacteric. From cancer during the childbearing period it appears between the menstrual periods very much more frequently, and is usually seen in slight quantities.*

7. Anæmia is present in all cases of persistent hemorrhage of long standing, regardless of the quantity of blood lost at a given time.

8. Hemorrhage as a factor may be assumed in a given case from the nature and appearance of the pallor.

9. "Ulcer of the cervix" is a term that should not be used in connection with the discussion of the treatment of cervical lesions. It should be called by its name—that is, "cancer," "chancre," or "chancroid"—and appropriate treatment for the respective lesions promptly applied.

10. The physician should not be excused or held blameless, in case of disaster, who had prescribed for uterine hemorrhage over a period of time where he had not made an examination to ascertain, if possible, the source of the hemorrhage and the pathology responsible for it.

11. Include the removal of the cervical mucosa when performing the operation of supravaginal hysterectomy. No epithelial tissue, no epithelioma.

12. Operation for cancer of the uterus located anywhere and regardless of its size demands oöphoro-salpingo-hysterectomy pan—and remember that an *increased percentage of recoveries in cancer cases depends a great deal more upon early diagnosis and prompt operative interference.*

Improved technic of operation and extensive operations have altered the gloomy statistics in cancer cases but little.

In order to discharge the duties devolving

upon us successfully, with justice to our patients, our profession, and ourselves, we cannot afford to fail to make an honest effort to arrive at a diagnosis of the cause of hemorrhage in each and every case we are called upon to treat presenting hemorrhage from the uterus as a symptom.

TUBERCULOSIS OF THE KIDNEY.*

BY W. C. DIXON, M.D.,
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As advances have been made in methods of diagnosis with reference to the kidney the fact has been established that kidney tuberculosis, instead of being a comparatively rare disease, is comparatively common. Formerly little interest was taken in this condition because of its supposed rarity, the difficulty of its diagnosis, and the unsatisfactory results of treatment, and it is only in recent years that it has received the attention it deserves. As to its frequency, Kelly quotes the statistics of five general hospitals in which in 12,688 autopsies 4.7 per cent showed tuberculosis of the kidney, while the figures from special hospitals for the tuberculous show that 20.2 per cent of the patients with tuberculosis of other organs have involvement of the kidney.

The common method by which the organisms reach the kidney is through the blood stream. Formerly most cases were considered to be ascending infections due to the fact that the early symptoms are practically always bladder symptoms and subjective symptoms on the part of the kidney are late in developing, or may not develop at all. Involvement of the bladder was thought to be primary; involvement of the kidney, secondary. This erroneous view did much to retard the development of our knowledge of the subject, as treatment was directed to the bladder and the disease in the kidney was overlooked. At the present time ascending infection is considered to be very rare. Infection by contiguity from a neighboring organ is possible, but rarely occurs. In view of these facts, for all practical purposes we may consider that every case of

kidney tuberculosis is a blood-stream infection, secondary to a focus somewhere in the body, although the primary focus may be quiescent and escape detection in even the most careful examination.

Braasch gives in the order of frequency the extra-urinary involvement in his cases as: (1) Male genital organs. (2) Pulmonary. (3) Joint. (4) Bone.

The disease is unilateral in 85 per cent of the cases, and usually remains unilateral for a considerable time. However, in neglected cases the second kidney is usually involved, soon or later, adding to the gravity of the case and robbing the patient of any chance for complete recovery.

Symptoms referable to the kidney may be entirely absent. Sometimes a dull, lumbar pain is complained of, and there may be tenderness over the kidney. Rarely there are attacks of renal colic. Enlargement of the kidney may occur, but this is by no means a constant finding. Indeed, the good kidney may be the one to show enlargement and tenderness, due to compensatory hypertrophy, and on these findings the mistake has been made of removing the good kidney, with quickly fatal results.

Bladder irritability is the most important symptom of renal tuberculosis. Thomas states that it is the most prominent, the commonest, and in 90 per cent of cases the earliest symptom. This fact is responsible for many errors in diagnosis. Because of this symptom a diagnosis of catarrh of the bladder, nervous bladder or cystitis, is made and the patient put through painful and useless treatment directed to the bladder, while the disease in the kidney is unsuspected. Any cystitis persisting for a considerable time and resisting ordinary methods of treatment should be classed as suspicious and a thorough investigation made as to the presence of renal tuberculosis. In the male, if tuberculous involvement of the bladder is present, and extension from the epididymis, seminal vesicle, or prostate can be excluded, kidney tuberculosis is surely present. In the female, bladder tuberculosis almost invariably means kidney tuberculosis.

Pus, blood, and albumen can usually be

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found in the urine. They may be present at times, absent at others. Tubercle bacilli can be found in the urine in 75 per cent of the cases of kidney tuberculosis, and repeated examinations of catheterized specimens should be made in the suspected cases. Recently Crabtree has emphasized the value of first centrifuging the urine at a slow speed, thus throwing down a majority of the pus cells, then centrifuging the remainder at a high speed, and making smears from the sediment thus obtained. This method gets rid of a large amount of the pus, which makes the bacilli easier to find. Rovsing teaches that a urine containing pus, but sterile to cultures for ordinary pus-producing organisms, is almost surely from a tuberculous kidney, even though tubercle bacilli cannot be found. This applies especially to urine obtained by the ureteral catheter. Failing to find bacilli in the urine, we should resort to guinea-pig inoculations. The Block technic gives quicker results than intraperitoneal injection, and is to be preferred.

X-ray examination and pyelography are not usually necessary to a diagnosis. Tuberculin has little, if any, value, either in diagnosis or treatment of renal tuberculosis.

The functional tests are of great value in diagnosis, as well as in determining the operability of the case. A tuberculous kidney, even though only slightly involved, will usually show a low phthalein output. It is necessary to know the functional capacity of the other kidney before deciding on nephrectomy.

The cystoscope gives invaluable information as to the presence of kidney involvement, the localization of the disease, the functional capacity of the other kidney, and the extent of bladder involvement. In a given case, if tubercle bacilli have been found in the urine, cystoscopy is necessary to localize the disease, to prove the presence of another kidney, and to give an idea of its functional capacity. Catheterization of the ureters in the presence of bladder involvement has been opposed on the grounds that organisms might be carried in and infect a healthy ureter. Most observers think this objection without sufficient weight to counterbalance the value of double ureter catheterization. The value of a differential functional test and bacteriologic examination

of the separate urines is so great as to offset the theoretical danger of infecting a sound ureter.

The treatment of renal tuberculosis is surgical, consisting in nephrectomy as soon as a diagnosis is made. Rest, diet, fresh air, and tuberculin have been tried without results. Cases reported as cures will usually prove to be instances of autonephrectomy, so-called, in which the ureter is completely obstructed. As the irritating urine fails to reach the bladder the symptoms improve. However, such a kidney is always a menace, as, in addition to the tuberculous infection, which continues to progress, there is increased danger of secondary infection with its distressing sequelæ. Wildbolz collected 316 bacteriologically proven cases treated in Switzerland, under most favorable circumstances, by nonsurgical methods. Seventy per cent had died, only 10 per cent were alive more than five years after the beginning of the disease, and only one was well in every respect. In contrast to these figures, Braasch reports 203 cases operated on in the Mayo Clinic, with an immediate mortality of 2.9 per cent and a percentage of cures of 60 per cent. An analysis of his figures shows that a larger percentage of cases (81 per cent) were cured in those having symptoms for less than one year. The longer an infection exists in the kidney, the more extensive bladder involvement will be found; consequently, when a diagnosis is made the kidney should be removed, provided the disease is unilateral and involvement of other organs does not contraindicate operation.

DISCUSSION ON THE PAPER OF DR. DIXON.

DR. L. E. BURCH, Nashville: Dr. Dixon has given us a very practical paper, and he has placed the subject before the society in a very concise way.

The great difficulty in treating renal tuberculosis is in making an early diagnosis. We know what the treatment is after the diagnosis has been made, provided the disease has not advanced too far; but the great problem is to make the diagnosis early. As Dr. Dixon has stated in his paper, the majority of cases of renal tuberculosis present themselves to the practitioner with the symptoms of cystitis. The patient has frequency of urination and painful urination. I want to say right here, and most em-

phatically, that we would gain a great deal if we would never look on cystitis as a disease, but merely as a symptom of a disease. Cystitis, pure and simple, does not exist. It is either an ascending or a descending infection, or it is due to the prostate, or to a stone, or something of that kind; and for that reason, whenever a patient comes before us with a cystitis, that case demands the most thorough and most careful examination. It is right here where we need team work, because to bring the case to a successful conclusion, we must have team work. The general practitioner may have a suspicion of what the nature of the trouble is. He thinks, possibly, that there is a renal tuberculosis or some other disease. We must call in the cystoscopist to give us an examination of the bladder and to test the functions of the kidneys. Frequently we must call in the X-ray man to make an X-ray picture. Then it is necessary to carry the tests further, to the laboratory, and, lastly, the case comes to the surgeon to remove the offending member. But I do want to emphasize most emphatically that if we look upon all cases of frequency of urination, painful urination, with blood in the urine and with pus in the urine, and then get busy to work that out, we are much more likely to reach a definite conclusion as to the nature of the case. I do not know of anything in medicine or surgery that is more difficult to work out in an obscure case than one that gives the symptoms of cystitis. After you have worked that out, you may have a tubercular kidney. You may not be able to find tubercle bacilli; seventy-five per cent of these cases will show tubercle bacilli, it is said. But that has not been my experience. One of the best tests, if we cannot find tubercle bacilli, is to make the guinea-pig test, and that is very reliable.

DR. PERRY BROMBERG, Nashville: The subject of tuberculosis of the kidney is of too great importance to pass by with so little discussion. Dr. Dixon has concisely given us an admirable digest of the literature on this subject, and I feel that we should heed the advice that he has given us; and if we do, we shall have been amply repaid for coming to this meeting. I refer particularly to the fact that the practitioner should not treat a case of persistent cystitis for any great length of time until he knows definitely that it is not due to tuberculosis. I am always disposed to believe that any physician is perfectly justified in suspecting that he is dealing with a case of tuberculosis of the bladder in any case of cystitis that has been irrigated by nitrate of silver and has been treated for a period of two or three weeks and does not yield. If the average case of cystitis does not yield to such treatment in a reasonable length of time, it becomes the duty of the physician to suspect that he is dealing with tuberculosis of the bladder; and since tuberculosis of the bladder is secondary most commonly to tuberculosis of the kidney, next to that of the lungs, it then becomes our duty to find out whether

or not the bladder is involved from descending infection of the kidney or involved directly from the blood from the lung itself. Now, that can be very quickly and easily illustrated in this way: If we have the bladder wall, with its serous coat, its muscular and mucous coats involved, we will get early symptoms of tuberculosis of the bladder secondary to tuberculosis of the lung deposited in that portion of the bladder that plugs the blood vessels between the muscular and mucous membrane of the bladder; consequently the tubercle bacilli will be deposited here. There will be no pus, perhaps, in the urine, nor no tubercle bacilli found in the urine, although you have the symptom of frequency of urination and a true tuberculosis of the bladder, but you have no tuberculous cystitis. In descending kidney infections, the infection passing through the ureter involves the mucous membrane, and not the muscular coat, and by the use of the cystoscope we have a means of detecting descending infections of the kidney. When the cystoscopist looks into the bladder, he observes a deposition upon the mucous membrane of little sago-grain bodies around the ureter and in a line from which urine is ejected from the ureter. He can presume at once he is not dealing with a case of tuberculosis of the bladder, but he is dealing with a case of tuberculous cystitis. The tuberculous cystitis, therefore, will be secondary to tuberculosis of the kidney, unless, as the essayist has said, it is an ascending infection from the prostate, the urethra, the seminal vesicles, etc. That is a good point that should have been brought out.

I have not much faith in the theory that tubercle bacilli can be eliminated through the kidney and found in the urine without tuberculosis of the kidney, of the ureter, or of the bladder. Professor Casper, of Berlin, tells us such a thing is possible; but in those cases where tubercle bacilli may be found in the course of life-insurance examinations without symptoms of tuberculosis, I would rather believe there is a focus of tuberculosis somewhere not giving rise to symptoms rather than to believe it possible for tubercle bacilli to be eliminated from the kidney without giving rise to some infection along its course.

Another point I would have specially liked to stress is the one the author of the paper brings up—namely, negative urine. You have withdrawn urine, and have failed to find any organisms at all. The pathologist reports back that he cannot find any organism or cannot get a growth. That case is suspicious of tuberculosis. Where the case shows negative urine, it is our duty to suspect that we have tubercle bacilli as the cause, and it becomes our duty to search carefully for other evidences of tuberculosis. I have watched those cases with suspicion in which I have been unable to find other organisms to which to attribute infection.

DR. W. H. WITT, Nashville: I would like to ask the essayist in what proportion of cases is there a

specific cystitis, and in what proportion is it simply due to other organisms than those of the tubercle bacilli?

Dr. W. C. DIXON, Nashville (closing): The point has been brought out by Dr. Burch and Dr. Bromberg that we must take the same attitude toward bladder symptoms that we now take toward stomach symptoms. We all know that when a patient comes to us with stomach symptoms we begin to think of chronic appendicitis, gallstones, or something else outside of the stomach producing the symptoms. We have got to take the same attitude in regard to bladder symptoms. If a patient comes to us with cystitis, unless we can say the man has a stone or an enlarged prostate or an acute gonorrheal cystitis, we must look to the kidney or somewhere else for his symptoms; so that I think the main part of the paper was the fact that bladder symptoms frequently mean disease of the kidney, rather than disease of the bladder, and that any cystitis which is not due to stone or an enlarged prostate, or secondary to acute gonorrhea, should be looked upon with suspicion until we can say positively the case is not one of tuberculosis of the kidney.

In regard to Dr. Witt's question, we have found bladder symptoms in some cases of tuberculosis of the kidney without specific disease of the bladder; but in the great majority of cases of tuberculosis of the kidney there is definite tubercular ulceration of the bladder.

Dr. Burch has said that these cases are hard to work out. A great many of us have not lived up to the statistics in general that in seventy-five per cent of the cases we can find tubercle bacilli in the urine. Recently I have seen two or three cases since using the method of Crabtree that I have proven positively, but previous to that was unable to find tubercle bacilli in the urine. The fact that we do not find tubercle bacilli in the urine is due largely to imperfect investigation of our cases, rather than that they are not in the urine. These cases do require close study and hard work, and that is the reason why they should receive careful attention. Any patient with bladder symptoms existing for a considerable time that cannot be accounted for should be looked upon with suspicion and a thorough examination made as to the question of tuberculosis. The earlier the diagnosis is made, the less chance there is of involvement of the other kidney, the less chance there is for extensive ulceration of the bladder, and the better the chance for the patient to be cured.

America's typhoid fever bill is more than \$270-000,000 a year.

If you sow a hygienic habit, you reap health; reap health, and you attain longevity.

THE SIGNIFICANCE AND MISMANAGEMENT OF ACUTE ABDOMINAL PAIN.*

By L. L. SHEDDAN, M.D.,
Knoxville, Tenn.

The significance of abdominal pain, especially of the acute, agonizing variety, is so generally recognized and thoroughly understood that it would seem superfluous to undertake to still further impress it upon your minds. However, the somber aspects of some of these cases when treated (or, rather, mistreated) medicinally which have fallen into my hands within the last few years lead me to believe that it is not as well understood as it should be. We so frequently see reports in the daily papers of sudden deaths from what is supposed to be acute indigestion—which, permit me to say, rarely, if ever, occurs—that it seems time for some physicians, at least, to wake up to a better realization of the extreme significance of this distressing and dangerous symptom. No pain, save possibly that of angina pectoris, is so significant of a grave and serious condition as is that of acute, agonizing abdominal pain, and the physician who fails to recognize it as such will make many grievous and fatal mistakes.

There are so many pathological lesions which may lurk within the hidden recesses of the abdominal cavity that I cannot, in the limited time at my disposal, begin to consider all of them. I will, therefore, confine myself to those conditions which are accompanied with abdominal crises, often erroneously interpreted and disastrously treated (or, rather, mistreated), and will try to give a few differential points which will enable us to recognize surgical from nonsurgical conditions.

There are two rules which it will be well to remember when dealing with these cases. While they are not infallible, they are safe to apply in most cases. The first is that pain which is paroxysmal in character is non-inflammatory in its origin, and is produced by some disturbance within some of the hollow viscera, and is an attempt of unstriped mus-

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

cular fibers to force out some offending or obstructing object. The second is that pain which is constant is due to some inflammatory condition, or to some irritation outside or in the hollow viscera which will lead to inflammatory conditions. We will consider these conditions separately, and will first briefly enumerate those conditions which give rise to acute, agonizing pain in the abdomen of a paroxysmal character:

1. Acute intestinal colic, produced by the ingestion of some indigestible or impure food.
2. Renal colic.
3. Hepatic colic.
4. Acute intestinal obstruction.
5. The crises of disease of the cord.
6. Crises of movable kidney.

The conditions which cause acute, agonizing pain which is constant in character are:

1. Perforations of hollow viscera.
2. Acute hemorrhagic pancreatitis.
3. Acute perforating or gangrenous appendicitis.
4. Thrombosis and vascular changes in the mesenteric vessels.
5. Twisting and torsion of the pedicle of abdominal and pelvic tumors.
6. Tubal abortion or ruptured tubal pregnancy or abscess.
7. Pain of vertebral caries or cancer.

The pain of intestinal colic is acute, severe, and usually paroxysmal, and is due to the efforts of the intestines to remove some offending material, and is a form of acute indigestion. This pain has been very tersely described as the "green-apple bellyache" of childhood. The irritation produced by the indigestible or impure food will soon be followed by diarrhea; or, if the trouble lie in the stomach, vomiting is produced, the cause is removed, and the pain is relieved.

2. Renal colic is produced by some obstruction to the ureter, such as stone or kinking. This is a severe pain, usually paroxysmal in character, and sometimes accompanied by vomiting. This pain is so characteristic that it is rarely misinterpreted. Radiating as it does to the thigh and scrotum, along the course of the ureter and the spermatic cord, makes the diagnosis almost positive.

3. The pain in a typical attack of bilious,

hepatic, or gallstone colic is also acute and agonizing in character. This may either be paroxysmal or constant. It is, as a rule, a late manifestation of gallstone disease where there is inflammatory action as well as an obstruction to some part of the biliary apparatus, hence the two characteristic pains. This condition is recognized by its location and the lines of radiation—viz., to the right shoulder and scapular region. There may be, and often is, vomiting, which apparently relieves the pain. When thus relieved, or when the obstruction is overcome, the pain suddenly ceases, and there is left localized tenderness at the outer border of the right rectus muscle at the junction of the ninth rib.

4. The pain of acute intestinal obstruction is so very characteristic, especially when other symptoms are taken into consideration, that it should rarely be misinterpreted. It is sudden in its onset, accompanied by vomiting and absolute retention of bowel contents. It is not attended with fever until late in its course, and localized pain is absent. Temperature may be normal or subnormal. If the obstruction is high in the gut, vomiting will be an early symptom and abdominal distention will not be marked. If the lesion is low in the alimentary tract, vomiting may be a late symptom and distension will be pronounced.

Acute general peritonitis gives practically the same train of symptoms, with the exception that the pain is constant, localized or general abdominal tenderness very marked, with elevation of temperature.

Perforations of the hollow viscera, such as perforating gastric and duodenal ulcer and perforation of the gall bladder, are accompanied with severe, agonizing pain in the right upper quadrant of the abdomen, boardlike rigidity and localized tenderness present, and preceded by such symptoms as indigestion and cholecystitis, soon to be followed by elevation of temperature and evidence of peritonitis. The pain is constant, rather than intermittent, and not usually accompanied by vomiting, but with evidence of great prostration or shock. These are serious conditions, and demand prompt surgical intervention.

Not every case of acute appendicitis is accompanied with this severe, agonizing pain;

but a great many of them are, and when present it is significant of a very serious condition. There is either a sudden shutting off of the circulation and rapidly developing gangrene or a perforation from a concretion and a rapidly spreading peritonitis. These are the cases which absolutely demand prompt surgical intervention. While all cases are serious and demand surgery for their relief, some may be left longer to themselves; but in this class of cases delays are dangerous, and a waiting procedure on the part of the physician or patient will often result disastrously. With a classical train of symptoms, of course the merest tyro would be able to make the diagnosis of acute appendicitis; but to wait for all of the classical symptoms to be made manifest would in many cases be to lose the patient, especially if treated by free purgation.

In the female there are conditions which give rise to this sudden severe pain which are not met with in the male—viz., ovarian cyst with twisted pedicle, ruptured tubal pregnancy, tubal abscess, and tubal abortion. All of these conditions give rise to agonizing pain which is continuous and often accompanied with vomiting.

The diagnosis of ovarian cyst with twisted pedicle is made by the history of the case and symptomatology. Given a woman with a pelvic or abdominal tumor, who is suddenly seized with acute pain, vomiting, and constipation, the diagnosis of the condition would be very clear. There is no elevation of temperature and no localized tenderness, and the pain, unlike an intestinal obstruction, is constant, unless there happens to be obstruction, complicating the condition, as I have seen in one case. The tumor will be seen to rapidly increase in size and the walls become much more tense. This is a serious condition. While all cases do not prove fatal without operation, a majority do, for the reason that the circulation in the tumor is obstructed by twisting of the pedicle, and gangrene rapidly supervenes, infection takes place, and general peritonitis or sepsis ends the scene.

This condition is not infrequently met with in women who are not aware that they have a tumor, and the diagnosis in this class of cases

is rarely made. I have seen one case of this kind which was diagnosed either intestinal obstruction or appendicitis because of the intense pain, and the patient had a narrow escape from death because the attending physician and consultants could not agree which it was and five days elapsed before they would consent to an operation. Another case I saw was diagnosed acute appendicitis and an operation was done, revealing the nature of the case. She presented the symptoms of acute, severe pain and vomiting. The puzzling part of the case was the age of the patient, which, I think, was eleven, and no history of a tumor. Ruptured ectopic pregnancy and tubal abortion are attended with sudden, severe pain which is constant in character. The diagnosis of a typical case should rarely be mistaken, and is made by eliciting a history of the case, which will be in a great many cases about as follows:

First, a period of sterility, followed by a missed or slight menstrual period. Many of these cases have been married for a period of years, or a number of years will have intervened since the last pregnancy, when they miss a period and will suspect pregnancy. Then a slight flow and some pelvic discomfort, for this condition presupposes a previous pelvic pathology. Then, upon making some sudden exertion, the woman will be seized with sudden, acute, agonizing pain in the abdomen, which will be constant in its manifestation. There will be rapid pulse and great prostration, and possibly vomiting. This will be followed or accompanied by a bloody vaginal discharge, which leads to the diagnosis of a threatened abortion and is usually treated as such. Later symptoms are tenderness over the lower abdomen, elevation of temperature, and a mass in the pelvis.

I will not discuss the pain of mesenteric embolus and vascular changes, nor take up any other condition which might be included in this list. I think enough has been said to impress any one with the fact that a great variety of pathological conditions may be accompanied by this kind of pain.

There are a few things I wish to especially impress upon the members present—not that you are not all well acquainted with the sig-

nificance of the matter, but to still further impress you with their importance.

There is this proposition I wish to lay down: That acute, agonizing pain in the abdomen is strongly suspicious of a serious condition; that when accompanied by vomiting a still stronger suspicion exists; and that when not relieved by vomiting is almost positive proof of a serious condition. When obstinate constipation is added, it is positive proof of a serious surgical condition, and an immediate operation should be advised.

While I have dwelt at some length upon certain differential points in the diagnosis of these conditions, it is of small consequence, as delays are dangerous. While we are arriving at a correct diagnosis and sending for a consultant to help clear it up, and then getting into a wrangle with him as to whether it be a case of appendicitis, intestinal obstruction, or a ruptured tubal pregnancy, our patient is rapidly reaching a stage where an undertaker is much more needed than the surgeon. This train of symptoms will not do to temporize with—they signify danger, and great danger. If a case of intestinal obstruction is to be relieved, it must be done quickly or the case is hopeless. The same may be said of the more violent cases of acute gangrenous and perforative appendicitis. An operation done in the first few hours means life for the patient; a delay of several days means certain death.

Another thing which I am especially anxious to impress upon every one present is that it is practically a criminal procedure to give a patient suffering with this train of symptoms a purgative. It is bad enough to give morphine, which we are all forced to do because of intense pain; but that is commendable practice when compared to giving purgatives.

If the case is one of perforation of the gall bladder, gastric or duodenal ulcer, acute gangrenous appendicitis or intestinal obstruction, an ovarian cyst with a twisted pedicle or a ruptured tubal pregnancy, a purgative is absolutely contraindicated and extremely dangerous. If the case is one of gallstone or renal colic, it can do no good to give a purgative; and if by chance it should be a case of ordinary intestinal colic, due to faulty masti-

cation or impure or indigestible food, if we will only wait a short time, nature will get rid of that. We can at least wait and give just as little opiate as possible until we are satisfied that there is nothing more the matter before we administer the purgative. If I were called upon to say what I considered the most pernicious and damaging sin in the medical profession was guilty of, I would unhesitatingly say administering purgatives in which acute abdominal pain was the most pronounced symptom before a diagnosis was made. Again, as all of these conditions are strictly surgical in their nature and cannot possibly be benefited by the administration of drugs of this class, why should we think of giving them? Again, why delay operative treatment by quibbling over the matter of the exact condition, when valuable time is lost by so doing, and when opening the abdomen will reveal the whole condition and enable us to adopt treatment which will be rational and prove effective?

Those of you who are not doing surgery can form no correct conception of the number of cases which come to the surgeon with a history about as follows: "Doctor, this patient has been sick for several days, and I cannot get his bowels moved. He began with something like colic, and I gave him a hypo. of morphine to relieve his pain, and then gave him a dose of calomel to move his bowels; but it failed to move them. Then I gave him a dose of castor oil and some salts, then gave an enema, but failed to get much result; so I gave him another dose of castor oil and salts. So far, nothing seems to move his bowels, and I am beginning to fear they are locked." You find the patient in about the following condition: Abdomen rigid and distended, possibly very tender, pulse weak and feeble, vomiting a greenish-dark material, temperature either elevated or subnormal, and the typical facies of the last stages of some grave intraperitoneal lesion.

This picture is familiar to every one here, and what have been the results? There can be but one result in such cases, and that is death. The case may be either intestinal obstruction or acute appendicitis or peritoneal infection from some other source, and the

treatment has rendered what might otherwise have been a simple, easy case to have been relieved, one of absolutely hopeless aspect.

Of course, Mr. President and gentlemen, I have been describing a class of cases which are extreme and typical in their aspect, and have left out those cases which, permit me to say, are many, in which there is just cause for doubt and delay. There are many cases of all the conditions which I have detailed which do not present this desperate train of symptoms and may be easily overlooked by any one, much less by the man who only sees an occasional case of this kind.

I am in a position to speak of this sin of the medical profession for the reason that I have in the past been one of the chief sinners. I have been guilty of giving purgatives in these conditions, you have been guilty, we have all been guilty; but twenty years' practice in a general work has taught me better, and I am going to ask you all to promise with me to "*never again.*"

DISCUSSION ON THE PAPER OF DR. SHEDDAN.

DR. W. A. BRYAN, Nashville: There is one item I did not catch clearly which was mentioned in the Doctor's paper, and that is a condition sometimes called enterospasm; and, instead of telling about several cases of this which I have had the privilege of seeing, I want to take up about five minutes of your time in relating one case.

A man, about sixty years of age, tall, thin, had no past history which bore any relation to the present symptoms. It was known that he had suffered from periodical pains in his abdomen, especially in the lower abdomen, for the past two years. From these attacks of pain he had had no fever. The pain was continuous, not paroxysmal. During these attacks he was unable to get the bowels to move by means of purgation. The pain would last a few hours or two days and then pass off. Under examination we told him that, in all probability, he had incomplete obstruction, that probably ultimately he would have to be operated on, and that if he got a severe attack not to take a purgative, but come to the office. He came one morning about nine o'clock, coming about forty miles from his home, and was suffering with the most severe attack he had had. The pain began the night before, was violent, and I never saw a patient who had perforative peritonitis suffer more than he did. His temperature was normal; the pulse was accelerated a little, not much. He vomited. He

was unable to get his bowels to move at all. We gave him enemata repeatedly, without getting any result, and at two o'clock in the afternoon of the same day he began to vomit what looked like stercoraceous material. We made a diagnosis of intestinal obstruction. We felt sure with the history, which was unquestioned, we had intestinal obstruction to deal with. That man was about six feet two. We opened his abdomen, and when we got inside we found no obstruction whatever. We found no pathology whatever; but his intestine, instead of being the intestine of a man of normal size, to say nothing of a man above the normal size, was about the size of one's little finger, the size of the intestine of a nursing baby; was flat, ribbon shaped. I lifted a handful of intestines out, and immediately they returned to the normal size; lifted out another handful, and the intestines returned to normal; so that the man had no further trouble, and scarcely any pain. That is not strictly a surgical case. I have seen five cases like it, no all of them occurring in my practice. I cite this case to show that we operate every now and then on cases of intestinal obstruction, and yet at the operation we find no evidence of it. That condition, I think, is responsible for a good many cases of so-called intestinal obstruction where we do not find the pathology as we expect to find it and in a lot of these cases in which we think there is a pathological condition, on getting into the abdomen we find none.

DR. W. H. WITT, Nashville: No more important matter can be brought before this Association than Dr. Shedd's plea that these abdominal cases be not given purgatives. Now, there may be conditions, as he intimated, in which it is safe to give a purgative; the presence of an acute abdominal pain; but those instances are comparatively rare, and the benefit to be derived from purgation is practically nothing. There are so many cases in which purgation is almost sure to do harm, and valuable time is lost and it behooves us to bear in mind and to make it a practice never to give a purgative in a condition such as he has described. But practitioners are not going to do that. Some practitioner will be called to see a patient next week who has an acute abdominal pain, and perhaps will give him a dose of castor oil. We see statements from year to year about not giving purgatives, but practitioners do not seem to heed the advice.

Another thing in connection with that which has been impressed upon me a number of times during the past year is that so many cases have recurrent attacks of abdominal pain without the diagnosis being very clear. They finally drift around from one place to another, and some have dropped into my hands at a time when a diagnosis was almost impossible unless one was willing to make a diagnosis from the history alone. In so many cases like that, particularly cases of gall stones and appendicitis, a hypodermic has been

even, but the patient has not been seen any more to facilitate and perfect the diagnosis so as to be worth something to the patient or to the subsequent consultant or operator. I believe in the use of hypodermics in many cases of abdominal pain. I know there has been a great cry in regard to making these patients comfortable, and that these hypodermics obscure the diagnosis. Personally, I believe they help the diagnosis.

Only last week I saw a woman in Nashville who had a tumor twisted upon its pedicle. A doctor had been called; he had given a hypodermic for the abdominal pain, thinking the patient had a kidney stone and was suffering from ureteral colic. The patient was not conscious of having a tumor. She got some relief, but later she began to suffer again. I saw the patient with the doctor, but the examination was altogether unsatisfactory. The abdomen was rigid and as tender as it could be. It was impossible to make a pelvic examination with any satisfaction; but a hypodermic of morphine so relaxed the patient that a pelvic examination was easy, and a large tumor could be felt. The hypodermic takes off the edge of the pain and extreme nervousness, which will enable the doctor to be more secure in his diagnosis of the character of the trouble.

DR. TOM A. WILLIAMS, Washington, D. C.: While the paper was being read Dr. Bryan asked me the question whether neurologists recognize the condition of enterospasm. I did not quite know what he meant at first. I did not know exactly what he meant, and we had a few words, and then he asked me if I would not say what I had said to him.

The condition he just described, evidently a functional one, we believe to be due to an overstimulation of the pneumo gastric nervous system, including the cranial and sacral systems. We do not know the cause of it always, but we do know usually when that system is overstimulated in one part of the body and this local condition is present it is overstimulated elsewhere. You know the function of the vagus nerve; you know the function of the corresponding portion of the autonomic nervous system of the head and pelvis. A conspicuous symptom in the head is overstimulation of the sphincter pupillæ muscle, and because of the sphincter fibers supplied by the third nerve you have pupillary contraction in such cases. You have modifications of the whole autonomic nervous system, and clinically we know such patients by very distinct symptoms, such as pupillary contraction, small eye, with a tendency to oversweating of the extremities, a tendency to spasm in the intestines, with dilatation of the stomach, spastic colon, a tendency to asthmatic attacks; sometimes strangury and difficult urination are characteristic symptoms. We know that such patients particularly are susceptible to drugs of the pilocarpine group, jaborandi, and that small doses of such a drug injected will produce a severe attack of what we call "vagotonia."

We know also that the symptoms of such patients are immediately neutralized by drugs of the belladonna group. But if belladonna will not at once relieve the patient, we must take into consideration the history and clinical observation for a considerable period, to determine whether or not the patient's symptoms are vagotonic.

I want to speak of one other point which the author of the paper did not mention at all—namely, what he called spasm of the cord causing a paroxysmal abdominal pain. I suppose he alluded to tabes dorsalis. This is really due to irritation, and later atrophy of the spinal roots, and interferes with their function by syphilitic leptomeningitis, of which one of the occasional symptoms is gastric crisis. Now, in a patient with an acute abdominal attack in which one is able to exclude inflammatory conditions, one should always think of gastric crisis and neurologically examine the patient. As a rule, a patient with gastric crisis shows modifications in the sensibility of the chest and abdomen. You will find them by careful testing with a pin, and can mark out all areas of sensation above and below; also there may be other digestive symptoms of tabes in the modifications of the lower loops of intestine and in the bladder. Even if you do not make a cystoscopic examination, you get a history of difficult urination. Rather than make a cystoscopic examination, which is painful, you can make a lumbar puncture, which is a simple thing, and examine the cerebrospinal fluid and lymphocytes, which, in a case of locomotor ataxia, will immediately clinch the diagnosis. (See *Early Diagnosis Tabes*, Arch Diagnosis, 1909.)

One gentleman asked me whether we find bradycardia in connection with the vagotonic syndrome. Yes, the heart is generally slow.

DR. L. L. SHEDDAN, Knoxville (closing): I do not know that there is anything else in particular that I care to say on the subject. The case related by Dr. Bryan was a clear case of intestinal obstruction, was diagnosed as such, and operation revealed acute intestinal obstruction due to tonic contraction, as described. There was spasm of the intestines, which produced all of the symptoms of acute intestinal obstruction, and, in fact, it was a case of acute intestinal obstruction due to a mechanical condition. I think his operation was perfectly justified; and I sometimes think it is a dangerous thing for a man to report a case of that kind before a body of men like this, for the reason that when one gets up and says the patient was operated on unnecessarily for a particular train of symptoms, it stimulates some other man, when he has a case presenting these symptoms, to hope and pray that the patient may be relieved without being operated on.

Railway cars would be sanitary if it weren't for the people in them.

INTESTINAL OBSTRUCTION.*

By W. M. McCABE, M.D., F.A.C.S.,

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Nashville, Tenn.

The sixty-per-cent mortality of intestinal obstruction is the result of errors in diagnosis or procrastination, and can only be reduced by overcoming these conditions. Why a physician or surgeon will rush a case of appendicitis to the hospital and immediately laparotomize him, and will calmly sit by a case of obstruction until practically moribund, is a psychological problem which I am unable to solve.

The diagnosis of obstruction is as positive as that of any other intra-abdominal condition. Paroxysmal pain in the belly, accompanied by violent peristaltic waves ("cat backs"), distention and vomiting of the stomach contents, succeeded by regurgitation of fecal matter, and the inability to evacuate the bowel, are, of course, unmistakable evidence. Alexius McGlannon says that if lavage and enemata do not give relief from pain, the diagnosis of obstruction should be made. If, however, one is not as yet satisfied, he should wait an hour and again wash the stomach. If duodenal contents are present in this washing, the diagnosis is certain. He has operated upon eighteen cases diagnosed by the above method and saved all of them. Enemata may cause the expulsion of gas and feces, but we must not be misled by this. The temperature at the beginning is usually normal; but as the toxemia progresses, it invariably drops to subnormal. The pulse becomes rapid and weak in the latter stage. Emaciation is rapid and the skin dry like that of a diabetic.

In paralytic ileus the peristaltic wave is not present, but coils of distended gut are visible. The temperature here is due to the associated condition. Intussusception usually occurs in children, and a tumor can be made out in practically every instance if the abdomen is relaxed by anesthesia. Mucus and blood may be frequently evacuated.

Pathologically, John B. Murphy divides obstruction into *dynamic*, *adynamic*, and *mechanical*. The dynamic type is rare, and is due to

chemicals, such as lead or tyrotoxin, acting upon the terminal nerves. The gut is contracted into a cordlike mass. I have seen two cases of this type. Adynamic obstruction is due to a paralysis of the bowel, and accompanies peritonitis and diaphragmatic pleurisy. This explains the abdominal pain and rigidity associated with pneumonia. Mechanical obstruction is due to a number of causes which will not be enumerated. It is our experience that obstruction from incarcerated inguinal herniæ does not show the degree of toxemia of other types of obstruction. This is probably due to the fact that the obstruction is some time in reaching completeness and that it involves a portion of the ileum low down.

That the bowel secretes a large amount of fluid above the point of obstruction there can be no doubt, and Hartwell and Hougett believe death is due to dehydration. They have been able to keep animals alive for a much longer period with the administration of saline than without it. Draper Murry, however, has dehydrated animals by the administration of pilocarpine, and claims they did not develop the same symptoms as those suffering from obstruction. He believes that certain portions of the gut normally secrete toxic substances which are neutralized by secretions from other parts of the gut, and the obstruction preventing the intermingling of these substances allows the toxic secretions to be absorbed. Whipple-Stone-Bernheim claim that the toxic material is adventitious and is formed by the mucous membrane of the gut. They found that a toxemia could not be produced if the mucous membrane was destroyed, and they also claim that absorption does not take place through a normal mucous membrane. They have succeeded in immunizing dogs, to a certain extent, by injecting into the circulation small amounts of the loop content. Whipple, in a paper read before the American Medical Association in 1915, claims to have proven beyond a doubt that the lethal material is a primary proteose produced by the mucous membrane. Fred Murphy, in experiments on loops of gut and occluded gall bladders, was unable to produce a toxic substance except in the presence of bacteria. The combined experiments of Whipple and Murphy would lead one to believe that the toxic substance is a primary proteose produced by the mucous membrane in the presence of bacteria. Whipple also states that this toxic material is

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

formed in the cells of the mucous membrane, and that simple drainage is probably not sufficient to effect a cure. Clinical experience does not coincide with this statement.

In mechanical obstruction death may result from gangrene and peritonitis.

The treatment of intestinal obstruction is *surgery*. If one possessed all the magnesium sulphate, castor oil, croton oil, and eserine sulphate which has been wasted in this condition, he would be a Cræsus. If the patient is seen early, before the stage of toxemia, a radical operation should be done by the ordinary methods; but it is those cases in the terminal stages of toxemia of which I especially desire to speak. Morphia gr. 1-4, atropine gr. 1-150, are administered one-half hour before the operation is begun. The deep structures of the abdominal wall are infiltrated with one-fifth of one per cent novocain solution containing adrenalin. The skin is now infiltrated and the abdomen opened. A knuckle of ileum as low down as possible above the point of obstruction is caught in a Smith forceps, and a small area is surrounded by two purse-string sutures of catgut. The bowel is opened, and a Pezzar catheter is inserted and held in place by purse string No. 1. If the catheter is to be left in for some days, purse string No. 2 is tied and inverts purse string No. 1. If the catheter is to be removed immediately, purse string No. 1 is loosened, or cut, and the opening is closed with purse string No. 2. While the bowel is emptying itself through the catheter, a search is made for the point of obstruction, and, if found, is dealt with according to the pathology and condition of the patient. If the patient's condition forbids a search for the obstruction, the catheter is left in the bowel and allowed to remain for several days. One will be surprised to find that many cases which are apparently hopeless will begin to improve rapidly and in a few days pass fecal matter by the anus. Normal saline is always given in abundance by hypodermoclysis and enteroclysis. McGlannon says that epinephrin seems to counteract the toxemia. I have never used it.

Of seventy cases of intestinal obstruction operated upon, we have saved fifty per cent. Of fourteen cases entering the hospital last year, one died without operative interference, thirteen had enterostomies performed, with six deaths and seven recoveries.

DISCUSSION ON THE PAPER OF DR. McCABE.

DR. H. M. TIGERT, Nashville: This subject is so important that it should receive some discussion. It is well known to every one that the mortality from intestinal obstruction is exceedingly high. I think there are a number of obvious reasons for this. In the first place, a great many of these cases come to operation very late—much later than there is any reason for; in the second place, a great many of them have been exhausted by futile efforts at purgation. This is one of the conditions in which operation is done as a last resort, which, of course, should be the first resort.

I wish to make only one other point, and that is, in operating upon cases of intestinal obstruction in extremis, when the cause is not obvious, one should not make a prolonged search for the seat of obstruction, but enterostomy should be performed. If this is done, it will be found that many patients will survive who otherwise would die. In a large percentage of cases a second operation to relieve the obstruction will be unnecessary, since not a few automatically relieve themselves when proper drainage of the dilated gut is instituted.

DR. W. F. NASH, Knoxville: I am deeply interested in this subject, as I am in most surgical subjects; but I do not feel like letting this paper pass without saying something about the opinion of the medical fraternity. There are countless thousands of people filling graves who ought to be working for a living, and the reason they are dead is because they had a poor doctor who did not have backbone enough to wake up and do his daily duty. It is very apparent to my mind that in the varied class of cases I see doctors waver too much, and it is strange that, in a case of tubal pregnancy or appendectomy or a case of acute salpingitis, physicians say, "You must go to the hospital right now;" but for a case of intestinal obstruction which is practically unmistakable they will say, "I will give you some calomel or some castor oil or magnesium sulphate, or I will have an osteopath come and rub your abdomen," rather than have the patient operated on. Why do they do it? Is there any sense, cause, or reason for such a procedure? When I sum up the cases of intestinal obstruction I have seen that have been referred to me, I think five days is the average length of time having elapsed between the obstruction and the time upon which the patients were operated. The only excuse I can see for this delay is that the practitioner does not either recognize the obstruction early enough or he has not the nerve or backbone to stand up and tell the people that this condition is absolutely surgical—just as much so as any case of appendicitis ever was—and that the only hope of relief is through the domain of surgery. The surgery of this condition is reasonably simple. The work is not hard. I know that doctors allow patients with intestinal obstruction to go day after day in the hope of doing something by means of cathartics, when, as a matter of fact, they are only killing their patients. My principal object in rising is to make

a plea for the early diagnosis and prompt action in these cases.

DR. C. N. COWDEN, Nashville: I do not think we will have a more important question brought before us at this meeting than the subject of intestinal obstruction, and I rise to emphasize one thing. A great many of our pathological conditions are important, and the patient's chances are better by having a consultation. But this is one condition in which I believe consultation is contraindicated. When we have a case of intestinal obstruction, the symptoms are always classic. There is not a man here who in ten or fifteen minutes in a case of appendicitis cannot make the diagnosis positively in nearly every instance. Sometimes a physician wants some one to share the responsibility with him; therefore he calls in a consultant after he has tried perhaps different methods of securing action of the bowels. He brings in a consultant who wants to go over essentially the same ground or do the same thing that he has put into effect, and he may call in a third man. When a third consultant is called in, in cases of this, you had better call the undertaker. I do not believe consultation in this condition is permissible. The thing you want to do in the presence of classic symptoms of intestinal obstruction is to operate as promptly as you can. After you get into the abdomen, sometimes it is a difficult thing to find just where the constriction is located. Instead of following the distended coils of intestine, you can simplify matters very much by finding the collapsed section of the bowel. If you can once find that out, you do not need to follow the intestine but a short distance until it will lead you down to the seat of obstruction. If we can only relieve the obstruction, a great many of our patients will not die.

Only in the last few years have I realized that patients do not die from the obstruction itself, but from the toxic material in the intestinal tract above the obstruction. The moment obstruction takes place, nature tries to protect itself by limiting absorption from the cavity of the intestines above the seat of obstruction; and when you relieve that obstruction, you turn loose all toxic material into the lumen of the bowel below; absorption takes place rapidly, and your patient dies with overwhelming toxemia. What you want to do in all cases is to perform an enterostomy, put in a fecal catheter, and bring it to the angle of the wound, and it will close. After the toxic material is relieved, the patient gets well with a fecal fistula; but in a short time the fistula closes, and the patient stands a much better chance with enterostomy than without it.

DR. L. W. HASKELL, Memphis: I simply wish to emphasize and even go one point further than what the speakers have already said in regard to the pathology of intestinal obstruction, which means a relatively early diagnosis. If a patient is sent to a physician with pain in the belly and inability for the bowels to act, usually it is intestinal obstruction.

The question of catharsis in acute abdominal conditions is one that should be brought to the attention of the medical profession very forcibly. There are very few acute abdominal conditions in which cathartics will

do any good, and these few things are when a man has eaten something, has pain in his belly, and his bowels have usually started moving, and the administration of the cathartic simply helps it along. In every pain in the abdomen, where the bowels are not moving, to give cathartics is simply exaggerating the condition.

The point has been made that if we do an enterostomy in these cases, in many of them the obstruction corrects itself; and so if we leave off giving cathartics in conditions on which we operate, we cannot avoid, unfortunately, an occasional adhesion. Many of the cases of intestinal obstruction we see, when we go into them, are due to a small band which evidently has been present a long time, and by too much peristalsis the intestine has gone down and produced a kink or has slipped into an adhesion. A physician comes along and adds more catharsis; and instead of relaxing and allowing that obstruction to have any fair chance, he drives it and increases the condition. If instead that patient be given an enema and has gone to the stage of vomiting when the physician is called in and the stomach washed out, he has a better chance for a surgical operation than if he is filled with doses of castor oil and calomel salts. That is a most important clinical point to be emphasized before the case is brought to the surgeon—namely, that he shall not be purged or an effort made to severely purge him. Such patients have a better chance for the obstruction to be corrected if not given a dose of medicine.

DR. W. T. BLACK, Memphis: With reference to the class of cases under discussion, I would rather have them go to the other practitioner than come to me. That should not be the case, however, in cases of intestinal obstruction; but it is due to the fact that they always come late, usually the third or fifth or even sixth day. The last case I had of intestinal obstruction was one that had gone on for five days. The patient had fecal vomiting for three or four days, due to obstruction from a gallstone in the small intestine.

The point has been brought up by others that the principal thing in these severe cases is to do an enterostomy. Nature has pointed that out to us by the fact that in cases following gangrenous appendicitis, where the bowel is involved, the patient looks as if he is going to die in four or five days from obstruction; but after fecal fistula forms, and the patient gets well. Most of these cases come to us after they are thoroughly purged and are toxic. Nature will relieve them often by post-operative obstruction by producing these fecal fistulae.

I had a case recently of a woman who had a lump formed below Poupart's ligament, supposed to be an abscess in the upper part of the thigh; and a doctor lanced it as though it was an abscess. It proved to be a strangulated femoral hernia. A fecal fistula followed but her life was saved. That is another example to do enterostomy and relieve the toxemia and the contents of the bowel, thus relieving the patient, and later do a more radical operation if necessary.

DR. W. M. McCABE, Nashville (closing): More cases of intestinal obstruction entering the hospital are moribund than any other class of cases. I have seen cases

lie in fifteen or twenty minutes after admission to the ward. When I am informed that a case of obstruction has been admitted, I am almost sure that the case is a very bad surgical risk. Since beginning the use of enterostomy, our mortality has been reduced; but we are not proud of our percentage of recoveries.

If one will procrastinate, I would advise him to withhold the administration of purgatives and administer saline by hypodermoclysis.

MENSTRUAL DISORDERS.*

By LUCIUS E. BURCH, M.D.,

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I have selected this subject for the reason that it is of vital interest to the practitioner, the specialist, and the surgeon.

I desire to state in the beginning that all menstrual disorders must be considered in the light of symptoms, and never as a pathological entity. Statistics show that 25 per cent of women menstruate irregularly, 47.4 per cent suffer with dysmenorrhea, and 37 per cent have profuse menstruation.

Amenorrhea is not unusual during the first year of menstrual life, and is of but little importance at this time, for the reason that the flow usually returns and maintains a fairly regular cycle. Amenorrhea coming on after the regular establishment of menstrual life is a different proposition, and should always be looked on as a symptom of grave importance and of sufficient import to demand a most careful history of the case, accompanied by a thorough physical examination. The great majority of cases of amenorrhea are due to some constitutional disease. The laity, to a certain extent, realize this, and consider amenorrhea as an early symptom of tuberculosis. Those cases that give the history of fairly regular menstrual cycle, followed by an amenorrhea, should be given a most rigid examination, and, in addition, laboratory tests of the blood, the secretions, excretions, and sputum should be made. This history will almost make the diagnosis in those cases that are due to change of climate or suppression from cold. Lack of development of the pelvic organ pre-

vents the establishment of the regular menstrual cycle; and if the pathology is marked, menstruation fails to appear. Before treating any cases of amenorrhea, exclude pregnancy; and if this is not possible, put the patient on a simple tonic and have her report again in a month for examination. Emmenagogues are rarely demanded, and the majority of them have but little value. Oxalic acid is quite popular in those cases of amenorrhea that are due to change of climate. I cannot say that it has any particular value; for, to my mind, menstruation returns when acclimatization takes place, and not before. Amenorrhea following a prolonged illness or a surgical operation should be looked on as a physiological condition, and no treatment is necessary. In this class of cases the primary object should be to build up the patient, and when this is accomplished nature will assert herself and menstruation will return. The acute suppression following exposure to cold may or may not be accompanied by discomfort. If the patient is in pain, put her to bed, give a saline purgative, and apply hot-water bags or hot poultices to the lower abdomen. Bromides internally will usually quiet the nervous symptoms. If menstruation fails to return at the time of the next period, then give manganese dioxide. I prefer it in pill form, given t. i. d. in two-grain doses. A difficult form of amenorrhea to treat is that due to obesity. This class of patients, as a rule, are fond of eating and take but little exercise. To effect a cure, a change in habits and mode of living is essential, and it is in obtaining coöperation on the part of the patient that we find the key to success. They must be firmly, but at the same time kindly, informed that relief can only be effected by means of diet and exercise. Amenorrhea due to mental worry, excitement, or trauma can only be relieved by rest, regular hours, and freedom of all anxieties. Taking amenorrhea as a whole, we must remember that it is only a symptom, that the etiological factor must be sought after and corrected, and that remedies administered for the sole purpose of bringing about a flow of blood from the uterus are rarely indicated.

Menorrhagia and metrorrhagia are often associated, and are due to the same causes,

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and for this reason will be considered together. It is the rule that menorrhagia makes its appearance first, and as the disease progresses metrorrhagia appears. These two conditions are directly opposite to amenorrhea, so far as the etiological factors are concerned. Amenorrhea is nearly always due to a pathological condition outside of the pelvis. Menorrhagia and metrorrhagia are due to pelvic pathology. It should be a standing rule among all physicians never to treat a patient with menorrhagia or metrorrhagia without first making a careful examination of the pelvis. It is my experience that 80 per cent of menorrhagias and metrorrhagias are due to one of the five following diseases: Cancer, abortion, fibroid tumor, extra-uterine pregnancy, and endometritis. I am confident that any physician who will carry these five conditions in his mind, and then obtain a careful history of the case, will have a pretty fair idea of what his examination will develop. I consider this chart most valuable in assisting one to reach a diagnosis, and I can most heartily recommend it. In referring to the five conditions that may produce menorrhagia or metrorrhagia, I might add that by endometritis is meant an infection of the uterus that follows labor, abortion, or gonorrhea, resulting in a thickening of the endometrium. This same thickened condition of the endometrium is also found in some cases of fibroids or retrodisplacements of a marked degree. The age of a patient is worth a great deal from a diagnostic standpoint. A woman who has passed the menopause and then has a uterine flow has a cancer in 98 per cent of cases. If all women knew this and would consult a competent physician, many thousands of lives would be saved annually. Fibroids are very rare before twenty-five years of age, and usually they do not appear until after thirty. All irregular or profuse bleedings at the time of menopause should call for an examination; and if the patient will not consent, the case should be given up. This is the time that cancer is likely to develop; and if a permanent cure is expected, it must be recognized and operated on while the disease remains as a local condition. The character of pain is important in searching out the etiology of menorrhagia and

metrorrhagia. In cancer pain is generally absent in the operable cases. A large fibroid may be present and give absolutely no pain; on the other hand, a small fibroid wedged in the pelvis is likely to render the woman a helpless invalid until relieved. Fibroid polyps produce uterine cramps, which are an attempt on the part of nature to throw off the tumor. Extra-uterine pregnancy has a sudden severe abdominal pain, followed by collapse; or, if there is an attempt at tubal abortion, there is a colicky pain to one side of the uterus, followed by a mild degree of shock or a fainting spell. Abortion is characterized by labor-like pains, with intervals of almost perfect ease. There are many cases of abortion, however, that have but little pain, and it is here that one can easily "slip up." The character of the flow should be given careful consideration. In cancer the onset is characterized by a slight show, following an exertion of some kind. This gradually increases, and the flow comes and goes at irregular intervals. Fibroid tumors usually produce menorrhagia, but not metrorrhagia. Some authorities go so far as to say that this is a fixed rule. I am willing to grant that this is the usual course in fibroids, but I have seen numbers of cases where both menorrhagia and metrorrhagia were present. The flow in extra-uterine pregnancy is due to the casting off of the decidua membrae from the uterus, and this is followed by an irregular uterine flow. In the majority of cases of extra-uterine pregnancy the patient goes a week or two weeks over the regular period, and then there appears the irregular uterine flow.

The treatment of menorrhagia or metrorrhagia should be directed at the cause, and anything short of this may be disastrous to the patient. For the treatment of the flow, until a diagnosis is made or for emergency hemorrhage, I consider rest in bed with elevation of the hips most important. The hot douch which is a favorite remedy, often increases the flow, and should not be used. Ergot, piturine, atropine, stypticin, sulphuric acid aromatic—all have their advocates, and each of these has a certain amount of merit. Tamponade of the vagina will lessen the amount of the flow. Those cases in which hemor-

rhage has produced a constitutional effect and the action of posture and drugs cannot be safely waited on demand an immediate dilatation and packing of the uterus.

Dysmenorrhea is a common ailment, statistics showing that about 45 per cent of women have painful menstruation. Pain or discomfort located in other parts than the pelvis during menstruation is classed under this head. There are many different varieties of dysmenorrhea, and from a pathological standpoint there remain several that are still unclassified. The pathology may be in the pelvis, or it may be due to a constitutional disease. It is not unusual to see women with dysmenorrhea whose pelvic organs are not only well developed, but also free of disease. A careful pelvic as well as a searching physical examination should be made in all cases of dysmenorrhea before arriving at a definite conclusion. There is no need to dwell on the treatment of those cases that are due to diseased appendages, for the reason that it is clear cut and well defined. Those cases that are due to a constitutional disease or to some pathological condition in a remote organ are treated as the occasion demands. There are other varieties that demand close study and further investigation, for the reason that treatment is often unsatisfactory.

Opium and alcohol should never be used to relieve the pain of dysmenorrhea. It behooves us to remember that painful menstruation returns every month; and if habit-forming drugs are once used, their continuance will be a necessity, with all of their evil consequences. Dysmenorrhea due to fibroids, cysts, and extreme displacements is a surgical condition, and needs no further comment. A very common form of dysmenorrhea is known as *obstructive*. It is usually found in virgins and sterile married women, and is characterized by a pain of a colicky nature that begins a few hours before the flow or just with the flow and passes off when the flow is well established, which is usually the first or second day. In this variety of dysmenorrhea there is often found an undeveloped condition of the uterus, with a sharp antelexion. A stenosis of the cervix is not at all unusual. Whether the obstruction is the direct cause or whether it is due to a neuro-

trophic condition is still a mooted question. It is a fact, however, that pregnancy always produces a cure, and that a thorough dilatation and curettement will relieve the symptom for a variable length of time, and in a certain proportion of cases a cure is effected by this means. It is also true, in a small number of cases, that a cure may be brought about by a change of habits, outdoor life, and a general constitutional upbuilding. A stem pessary is often effective in curing this variety, but it is to be remembered that it may produce an infection that is much more dangerous and distressing than dysmenorrhea, and for this reason it should rarely, if ever, be used. If palliative measures or constitutional treatment fail, I advise a dilatation and curettement. I consider it quite important, after the cervix is dilated from three-fourths to one inch in diameter, to then continue to keep the opened dilators in the cervical canal for fifteen or twenty minutes. This step insures the permanency of the cure. In some cases the symptoms return within a year or two, and a repetition of the operation is demanded. Those cases of dysmenorrhea that are due to an irritability of the autonomic nervous system may be relieved by atropine sulphate in 1-100 grain doses, given three times a day. The drug is given internally, and should be started two days before the expected period and continued through the first day of the flow. Hydrastis given for three weeks before the onset of the flow is occasionally successful in relieving uterine cramps that accompany the period.

There is a form of dysmenorrhea that is due to an increased ovarian secretion. It is characterized by premenstrual headache, bilateral pain in the region of the ovaries, which begins with the flow and ends with the flow. Uterine cramps may or may not be present; if they do appear, it is not until after the flow is well established. Remarkable results are being obtained in this latter variety by the application of adrenalin chloride 1 to 1000 to the genital spots in the nose. These spots are situated at the anterior portion of the inferior turbinate in either side of the nose. The solution should be kept in contact with the spots for two to three minutes.

In conclusion, I desire to call attention to

the following important points: All menstrual disorders are symptoms, and should call for a careful history of the case, followed by a thorough examination. This routine should invariably be carried out before prescribing. The etiological factor in amenorrhea is usually outside of the pelvis. The majority of cases of menorrhagia and metrorrhagia are due to one of the following diseases: Cancer, abortion, fibroid tumor, extra-uterine pregnancy, and endometritis. Those cases of dysmenorrhea that are not due to tumors, diseased annexæ, extreme displacements, or obstruction may be relieved without resorting to surgery.

DISCUSSION ON THE PAPER OF DR. BURCH.

DR. J. L. McGEHEE, Memphis: I desire to emphasize certain points brought out in this paper, and to lay as much stress as possible on them.

One of the best points in the paper is the statement made in the beginning that we should regard menstrual disturbances as symptoms rather than diseased entities. One of the most pernicious beliefs held by the feminine public generally up to a few years ago—and I am inclined to believe it is true very largely at the present time, but they are becoming educated along these lines—is that menstrual disorders are supposed to be characteristic of the menopause. No more erroneous belief, or one fraught with more dangerous effects, was ever supported by the public. The average woman arriving at the time of the menopause expects this period to be characterized by abnormality. I am sorry to say that all of us can bear witness to the fact that they will come to us in the late stages of cancer with the history that they consulted a doctor who gave them pills or advised douches and said that everything would go well after a while. When cancer of the uterus can be diagnosed macroscopically, it is, as a rule, inoperable. When the neighbors know how the patient is disturbed by an odor escaping from the uterus, and that she is having abnormalities at the menopause, it is too late for diagnosis or any therapeutic effort. It is rare that cancer of the cervix exists without there having been a time during the history of the case that its presence was not manifest and warning signs were not given. The so-called "show," a few drops of blood appearing after straining at stool or sexual intercourse, is an early sign of beginning cancer of the cervix. Disturbances in menstruation as to the number of days and amount of the flow are suggestive. Those symptoms appearing in a woman at this period of life demand investigation of the pelvic organs as a whole, both microscopically

and macroscopically. It is true cancer of the fundus remains a local condition longer than cancer anywhere else in the body. That is true of the fundi of all organs, due to the lymphatic supply; but cancer of the cervix remains local sufficiently long for the diagnosis to be made and proper treatment applied. In these cases nature sounds a warning in the "show," or watery discharge, and unless it is heeded the woman is doomed.

DR. W. T. BLACK, Memphis: I wish to speak briefly on this subject and, in the first place, to report a case of amenorrhea in a woman forty-five years of age—one who had never menstruated during her lifetime, supposed to be due to some congenital defect.

Dr. Burch has stated that amenorrhea may be due to some constitutional trouble producing an anæmic condition or to obesity. We have cases that are due to change of climate, to close confinement, etc. He stated that practically all amenorrheas were due to troubles outside of the pelvis. While that is true, we must not lose sight of the fact that we may have trouble produced in the pelvis.

During the last six months I saw a woman who gave a perfectly normal menstrual history. She was taken sick, was in bed five or six weeks; then she was up and about in a fairly good condition, but for five months she had not menstruated. She never missed a period before in her life. She would come every twenty-eight days, was normal in amount, and would last a certain time. The woman's blood examination was not sufficiently affected to account for the amenorrhea. It was not a secondary anæmia that produced amenorrhea. It was found she had a lump in the pelvis, which was thought might possibly be a pregnancy until ruled out; but at the time of the operation it was found that her ovaries were completely destroyed, due to infection.

When we come to the question of metrorrhagia, the first thing we think of when we have a woman who has an increase in the amount of flow and the length of time she menstruates is infection, a specific or infectious type of endometritis. If she has a profuse flow, we think of miscarriage or an abortion or a tubal pregnancy.

The typical history of cancer which Dr. McGehee has just given us is usually characteristic, but we must remember we have exceptions to that rule. Within the past year I have seen two cases, one in a woman thirty years of age and another in a woman of forty-one, who gave perfectly normal menstrual histories, except some leucorrhæal discharge. One menstruated three months and the other four months, and never missed a period—never a stain of blood between the menstrual periods in their lives—so that we have exceptions to all rules, and we should not always forget that this condition might be cancer. You would think of incomplete abortion; but, after all, the point which

we should dwell upon is that in every woman who has an irregular menstrual history we should make it a point to go over her carefully and thoroughly medically, and she should have a pelvic examination.

DR. M. H. PANHORST, Jonesboro: I have enjoyed this paper very much, but there is one thing to which I desire to call the attention of the medical profession. For mercy's sake, in this splendid century, with all the light we have, do not tell a woman forty-five years of age that when something gets wrong with her it is change of life and she will get better after a while. If you find something that is wrong, don't say she has change of life, don't let the woman go; but investigate and find out what it is, and you will invariably find something wrong.

THE TREATMENT OF ECLAMPSIA.*

By J. T. ALTMAN, M.D.,
Nashville, Tenn.

It is doubtful if any consideration of disease therapy presents a wider divergence of opinion and ideas than that involved in a discussion of the timeworn subject of eclampsia and its treatment. Our ignorance of the true or specific cause of the disorder, combined with the altogether empirical treatment now in vogue, is alone responsible for this great difference of opinion. It is to emphasize some of these ideas, and not to attempt or claim anything new, that prompts me to bring this subject to your consideration at the present time.

Following in the line of preventive medicine, the keynote of our profession to-day, I would like to emphasize the great importance of proper prophylaxis. I do not believe, with Edgar and Davis, that eclampsia can always be prevented. That it will occur, in a few cases, in spite of all treatment, cannot be denied. But undoubtedly a large number of cases can be prevented if all are properly treated and closely watched during the last half of pregnancy.

In most instances certain prodromal symptoms are present, which serve as danger signals, but some of the very worst cases burst forth like a thunderbolt from a clear sky. A casual examination of the urine once a month

for albumen is not sufficient. The urine should be examined at least twice a month for albumen, casts, and solids, as shown by the urea of ammonia coefficient. The quality is also important. Of equal importance with urine analysis is the blood pressure, which should be systematically taken. In addition to these precautions, we should occasionally see the patient to see if any headache, disturbance of vision, nausea, or other digestive symptoms are present. Some claim beneficial results from the administration of thyroid extract in five-grain doses three times a day for a long period of time. Personally, I have not been able to notice any perceptible effects from its use.

Whenever we notice any of the prodromal symptoms of eclampsia, we should institute immediate steps to control them. This is done by rigid diet, such as cutting off of all meats or meat extracts, and, in the severe types, giving nothing but milk and plenty of water. Keep the patient quiet, as exercise may precipitate convulsions. By a rigid diet we stop, to a certain extent, the formation of the toxins, and at the same time turn our attention to eliminating those already in the system. This is done by stimulating the emunctories. Calomel, followed by sulphate of magnesia, should be given until free purgation is established and kept up. Favor skin elimination by hot baths or packs, never by diaphoretic drugs. Stimulate the kidneys by free use of water combined with nitroglycerine, but do not give the potassium salts. If the blood pressure is high or increasing, that may be reduced by the above treatment and the administration of veratrum, nitroglycerine, and chloral hydrate. If the symptoms do not improve and the blood pressure is not reduced by such active treatment, then we should take the proper steps to terminate pregnancy before convulsions occur by such methods as will produce the least amount of shock and the least injury to the parturient tract.

We will now consider the treatment of the condition after one or more convulsions have occurred. Cases of eclampsia vary so greatly in severity that no routine treatment can be followed. The principles upon which the proper treatment of eclampsia are based depend

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upon the view that eclampsia is a complex toxemia, the original source of which is probably the placenta, and, furthermore, that secondary sources of toxemia arise during the course of the disease from profound alterations in metabolism and from failure of the excretory function of the kidneys. Therefore, we have two immediate objects of treatment, as follows: (a) To terminate the pregnancy. (b) To promote the elimination of the toxins and to neutralize their effects.

There are two distinctly different schools of thought, and the relative importance attached to these objects are by no means the same. One school regards the first object as all important, and subordinates everything to a rapid emptying of the uterus. To this school the treatment of eclampsia is mainly a surgical problem.

Another equally important school regards the second object as all important, the eliminative treatment is of prime importance, while the termination of pregnancy is purely a secondary matter, and according to this school the treatment of eclampsia is mainly a medical problem. Each school presents an array of statistics in support of its treatment that appears quite convincing. In 1911 Dr. Peterson, of Ann Arbor, wrote a very able article strongly urging the surgical treatment and giving a decided preference for vaginal Cæsarean section. He reported over five hundred cases, in the hands of several operators, with a maternal mortality of 17 per cent and a fetal mortality of 23 per cent. The following year Dr. Gustave Zinki, of Cincinnati, wrote a very interesting article on the conservative or medical treatment. The number of his cases was much smaller, but his maternal mortality was only 12 per cent, while his fetal mortality was 46 per cent. Thus, you see, from the experience of these two writers, the medical treatment gave a smaller maternal mortality by 5 per cent, but increased the fetal mortality by 23 per cent. I think statistics are very unreliable at best. I do not think that we should stick dogmatically to the teachings of either school, but should treat every case as a law unto itself. The milder cases will get well under either the medical or surgical treatment, and the severe types will

tax our ingenuity to the utmost. In some cases we should follow the medical treatment alone, while in others we should resort at once to the surgical treatment, while in still other cases a middle ground should be adopted. One of the most pronounced of the comparatively modern advocates of the medical or conservative methods is Hastings Tweedy, of Dublin, and his is called the "Dublin method," or, as it is sometimes wrongly called, the "morphine treatment." According to Tweedy, this method rests upon four principles: (1) Accouchement force is not advocated in any form; immediate delivery only when easily possible. (2) Limit metabolism and avoid further metabolism. This is done by starvation, gastric lavage, and the giving of morphia. (3) Aid excretion by purging and irrigation of the bowels. Sweating is never done, as it concentrates the toxins in the blood, thereby increasing the danger of convulsions. Venesection in specially selected cases, followed by infusion of salt, or, better, by the carbonate of soda into the vein or the bicarbonate of soda under the skin. (4) The treatment of special signs, such as convulsions, respiratory weakness, and cardiac weakness. Morphia, according to Tweedy, meets these indications best of all. Immediately after the first convulsions, if possible, give one-half grain morphia hypodermically and an additional one-fourth grain every two hours until two, or even three, grains are given in the first twenty-four hours. When the respiration reaches six or seven per minute, it is an indication that the limit is reached. After the first dose wash out the stomach thoroughly and pass a reliable purgative through the tube—any effective purgative. This done, catheterize the patient, measure and then analyze the urine. Patient must be kept well on her side or almost on the face to prevent aspiration pneumonia. Pass a high colonic tube and irrigate the bowels with several pints of a solution of bicarbonate of soda, and at the close of the irrigation leave a pint in the bowels for absorption. If the urine remains scanty, then use a solution of the bicarbonate of soda under each breast. Labor is never induced at this juncture, but should take place as it may. Do not interfere until the

cervix is dilated; then apply forceps and shorten the second stage.

Straganoff, of St. Petersburg, follows a similar line of treatment, except he gives large doses of chloral hydrate per rectum in conjunction with the morphine. The results of this line of treatment are as follows:

Tweedy treated seventy-four cases, with a maternal mortality of 8.11 per cent and a fetal of 30 per cent. Straganoff treated personally three hundred and sixty cases, with a maternal mortality of 6.6 per cent and fetal of 21 per cent.

Now a word about the mortality rate in the United States. The rate as gathered from nine of the largest lying-in hospitals in this country gives an average of 38.4 per cent maternal. The Royal Maternity of Edinburgh gives a maternal mortality of 66.6 per cent; Guys Hospital, in London, is 25 per cent; Williams, at Johns Hopkins, 20 to 25 per cent; DeLee, over 20 per cent; the New York Lying-In Hospital, 30.8 per cent; Edgar, 20 per cent; Cragin, of the Sloan Maternity, 28 per cent. In most of these hospitals various methods are used.

Notwithstanding the fact that the method of Tweedy and Straganoff shows a lower maternal mortality than any that I have seen published, I am convinced of one fact, and that is that the patient is not safe until the uterus is empty, and some of them will die even after that is done. All medical treatment can be but palliative, after all. We do not know the specific toxine that causes eclampsia; but we do know that we have a poisoned blood stream, and that poison is due to pregnancy. Therefore, the only way to effect a cure is to stop the formation of the toxines and get the poison out of the blood as quickly as possible. The only rational way to do this is to empty the uterus and then eliminate the toxines. When and how to empty the uterus is a vital point, and one that engenders many different opinions.

In some of the milder cases at term it may not be necessary to bring on labor, as nature will frequently come to our rescue. In some cases simply rupturing the membranes will cause the convulsions to cease or become much lighter. In other cases the passing of a

catheter between the membranes and the uterine walls, then packing the cervix and vagina tightly, will accomplish the desired ends. As this may fail to excite labor, we may introduce the rubber bag after rupturing the membranes and attach a weight. This is a very effective way, but is too slow in the severe types. In multipara during labor, or even in primiparas where the cervix has been taken up, we may dilate the cervix manually by either the Edgar or the Harris method in forty to sixty minutes, then apply forceps or do a version, as seems best. If the cervix is harder, but partially taken up, I prefer the Bossi or DeWees dilators. These four-bladed dilators are very powerful, and much harm may be done, but with proper care and time the cervix can be dilated enough to apply forceps and complete the delivery at once. However, before we apply forceps it is best to complete the cervical dilatation by the Edgar method of dilatation.

The technique of the branched dilators is as follows: It can be done safely in the home with proper aseptic precautions. Complete anæsthesia by ether. Properly prepare the patient, instruments, and hands. Grasp cervix with vulsellum forceps, retract the vagina, and introduce the closed dilator with the small guards at first. Be sure the dilators pass through the internal os. Dilate slowly, so that the cervix will stretch and not tear. Imitate nature by applying power intermittently. When the cervix is dilated to the size of a dollar, put on the larger guards, as they will not slip out of the cervix. Twenty to forty minutes will be necessary to get the cervix fully two-thirds dilated. Forceps can now be applied, but should not be until the dilatation is completed manually by the Edgar method. Now apply forceps if the position is favorable; if not, do a podalic version. Another rapid method of delivery is vaginal Cæsarean section, first emphasized by Durham. This requires a skilled surgeon with the proper environments. By this method the anterior and posterior lip of the cervix and lower segment is cut through, after which the child is extracted by forceps or podalic version.

The last method to mention is abdominal Cæsarean section. At the present time the

field of Cæsarean section is limited to a small per cent of cases, but undoubtedly the field is widening. Under the following conditions I would unhesitatingly advise the Cæsarean section as the operation of choice: A primipara with a long, hard cervix, having hard convulsions at frequent intervals, totally unconscious between them, labor absent, in a hospital with a competent operator, and not previously infected by unclean hands. I think a section offers a better chance for both mother and child.

We know that there is danger of death in any one of the convulsions, therefore it behooves us to take active steps to control them as quickly as possible. How shall this be done? There are two ways of controlling them. One is by the free use of nerve sedatives, and the other by cardiac depressants. Formerly chloroform was much used, but now we know that it is dangerous and should not be used at all. An anæsthetic is not needed except for operative procedures, and then ether is preferable. It has been proven that chloroform adds greatly to the destructive liver changes. By far the most reliable and certain drug to stop the convulsions is morphine after the "Dublin method," or combined with chloral after Straganoff. Theoretically it is contraindicated, because it interferes somewhat with bowel elimination and increases the coma. Practically this does not obtain, as the certainty of its action more than counterbalances the supposed delay in elimination. After a full dose of morphine I have gotten good results from the use of chloratone where the patient is able to swallow.

The cardiac depressants are veratrum viride and venesection. Veratrum has gained a great reputation in some localities, but I must say that it has been very unsatisfactory in my hands. Several times I have seen it produce such distressing nausea that morphine had to be given to stop it. I have no doubt that veratrum and chloroform have added many victims that were attributed to the toxemia. To my mind, venesection, boldly done and followed by direct infusion of normal saline, or, as Fisher advises, the carbonate of soda, thus correcting the dangerous acidosis, is the most rational treatment. By this method we

reduce the high blood pressure which is present in most cases and then dilute the toxins in the blood stream. Blood letting is largely a lost art now because a few decades ago it was carried too far.

Now, having properly carried out the two first indications for treatment—viz., the control of the convulsions and the emptying of the uterus—we next turn our attention to the third—elimination. Give calomel followed by salts, or, in the severe types, two drops of croton oil in a dram of olive oil on the tongue. Pass a colonic tube high up and flush the bowels with one gallon or more of soda water. Follow this later with a pint of the same solution every four hours, to be retained, or use the Murphy drip. Increase the action of the skin by hot packs, never by diaphoretic drugs. Nitroglycerine as a diuretic, and plenty of water by mouth as soon as the patient can swallow it. No food of any kind should be given for forty-eight hours or more, and then milk only for two or three days. It is a great error to feed too early or too much. Absolute quiet is very essential. Avoid all noise, all excitement, and bright light.

The baby should not nurse until elimination is good and the mother has returned to consciousness. She should be closely watched during the puerperium, as her recovery is usually slow. Remember that insanity is not an infrequent sequel. During the attack these patients should never be left alone. They may fall and fracture the skull or some of the bones of the extremities. The tongue should also be protected from injury, as deaths have occurred from an infected tongue. Another danger that should not be forgotten is aspiration pneumonia. To prevent this, don't let the patient lie on the back. Keep her well on the side, almost on her face. A rolled handkerchief pressed between the teeth is the best way to protect the tongue from being injured. All subsequent pregnancies should be closely watched, to prevent a recurrence. A few days ago I saw a woman who had convulsions with her first baby, escaped entirely the second, but died of eclampsia in her third labor.

Health first is the highest form of safety first.

BIRTH CONTROL.*

BY HENRY LOCKHART, M.D.,
 Coalmont, Tenn.

If while I am reading this paper you should happen to see a gentleman with prominent teeth, eyeglasses, and a big stick snooping around, please let me know, and I will at once, without further ado or comment, hie me back to the sticks of old Cumberland, which is my natural habitat, where I belong and, I suspect, where I ought to stay. Said gentleman is supposed to be in Bermuda, Trinidad, or some such place in the West Indies, but you can never tell. But, gentlemen, this subject, "Birth Control," is coming up and is up for discussion and decision. So far as I know, this is the first time it has been brought up in a medical meeting of this kind. It is said that "fools rush in where angels dare not tread." There will have to be an addition to the class that rush in, and we may make it read, "fools and country doctors rush in;" but in this particular instance, at least, the country doctor is a subdivision of the general class that rush in. Be that as it may, a fool by any other name would have just as little sense. We cannot say that we are rushing in on this subject. On the contrary, we approach it with awe, with bared head, reverent hand, and silent step; for in attempting to discuss this theme I believe we are approaching as near the "Great White Throne" as is possible for man. In dealing with it we are brought face to face with the law of laws of all creation and being, with all its mysteries and possibilities. Let us, then, approach this "holy of holies," as it were, on bended knees.

The necessity for the discussion on this subject is not of the medical profession's seeking. On the contrary, it has been, and is being, avoided by them. But our motto has been for some years, "Educate the public;" and we have succeeded in this, and in some instances beyond our fondest expectations. In fact, they are getting too blamed smart. They are now putting this question squarely up to us as a profession, and, in the immortal words of

somebody, "What are we going to do about it?" The question is being asked us by our patients, and articles on it published in the press, and is being discussed by the laity, while we, the ones most concerned and to whom it must finally come for decision, because our profession is in all reason the only one competent to pass judgment, are endeavoring to dodge the responsibility and shirk the task, refusing to look it in the face.

But it avails us nothing; for, like Banquo's ghost, it will not down. Its consideration cannot longer be put off; the tremendous responsibility must be assumed by those to whom by education and position it rightfully belongs—the physicians. They must be the final judges.

I deem it unnecessary to say anything in explanation of my choice of subject, "Birth Control," except this: Is it right that we as a profession, under certain circumstances, give advice or furnish medicine to prevent conception and thus control births? I think that the position of the profession has been decidedly in the negative; in fact, it has been considered unethical in the extreme, and is frowned upon by the greatest part of the profession. I know it is not practiced to any great extent by them. But just now the question is being asked by a great many, and in a short time will be a vital, burning question. We all know what the prevailing belief has been. It has been in keeping with the biblical command to the Israelites: "Multiply and replenish the earth." Still, there is much to be said to the contrary. I have but one fear in connection with the discussion of this subject, and that is that some political, professional reformer will get hold of it, make a hobby of it, ride into office on it, and pass a law limiting and regulating the number of births a man can have in his family.

In talking of this matter all sentiment must be avoided, because it is a cold-blooded proposition and must be discussed as such. So far as children are concerned, he who has never known a parent's love is not fit to discuss this subject, and would make a poor judge of any other. If ever the heartbeat of an angel was heard on earth, it is in the patter of childish feet; if ever the purest, richest, rarest note of

*Prepared for the annual meeting of the Tennessee State Medical Association, Knoxville, May, 1916.

heaven's choir fell on mortal ears, it is in their laughter; if there ever was a snowflake white enough and pure enough to fall on the golden streets of the eternal city, that snowflake could well be put on earth as the soul of a child. That's sentiment; now for facts.

First, let us look at it from the mother's point of view. And believe me, gentlemen, they are making me look at it right square in the face, and they have been making, or soon will make, you look at it. "Motherhood" is that magic word which shines like a halo of supernal light; fit subject for the brush of the greatest artist that ever caught the mellow-ness of the moonlight or snatched the gorgeous sunset from the sky and put it on canvas; fit theme for the greatest bard that ever sang of love eternal and a soul divine. That's sentiment and truth under proper conditions; but how about the conditions we so often see—a poor, tired woman, frail, weak, nervous, an overworked wreck from whose cheek has flown the flush of joy, from whose eye has gone the holy fire of motherhood, working and nursing, nursing and working, and about every fifteen months going down into the valley of the shadow of death to give birth to another, giving day and night, year in and year out, her lifeblood to the child growing in her womb or at her breast, and for a part of the time at both places? That's not sentiment, that's fact; that's not motherhood, that's martyrhood. Is it any wonder they say to you, as they say to me: "Doctor, I had rather die than to become pregnant again?" Let me say what you all know—they are dying not only from the terrible strain of too numerous pregnancies and deliveries, but from efforts to get rid of the foetus after conception. The female of all domestic animals is protected and not worked while breeding and nursing; but the average woman is not spared in the average American family, except for about a week when she is confined, when John gets some slovenly, ignorant girl "to do the work while Sally gets down." Fellow-physicians, they have asked, and are to-day asking, you: "What are you going to do about it?" My answer has been, and is, between me and my God and them.

Next, let us look at it from the father's

standpoint of view; for dad has got a say-so in it, too. Dad is an individual about whom you do not hear much, for his face would not look well on canvas nor his name sound well in a poem. He is a person very much despised, abused, and neglected; yet he is a very important personage in the world and, little as you would think it, has a right to ask questions. When he comes to you, as he comes to me, and says, "Doctor, I don't want any more children; my wife is weakly, we are poor, we now have all we can care for, I can hardly make a living for what I now have; I want to do right by what children I have—I want to educate them, I want to give them a chance in life, but I've got all I can care for"—that's not sentiment, that's facts—from dad. Gentlemen, he's asked me and is asking you: "What are you going to do about it?"

Now let us look at it from the child's point of view. To them it is not a question of "to be or not to be," as Shakespeare puts it; but it is, to have been or not to have been. They cannot come to you, as the father and mother do, and say: "Doctor, would it not have been better if we had not been born?" But all we have to do is to look at their poor, frail forms, their expressionless faces that were never lit by a smile, and their lusterless eyes in which never shone the light of happiness, to see it written there; or we have but to listen to the moan of pain and watch the feeble spark of life as it flickers out of the famished body that was brought into this world by a birth where it would have been better had there been no birth; or, if they do not die in infancy, watch them through life, starting out handicapped as they are mentally and physically, as they drift and wander life's dreary course with never a hope nor aim; and when they go back into the oblivion from which they should never have been called, they only leave behind about six to ten more just like themselves to drift on the stream of life. Gentlemen, their poor, cramped, undeveloped souls are asking you: "What are you going to do about it?"

Let us look at it from the taxpayer's standpoint. There never was a nation but was divided into three classes—upper, middle, and lower. Of these, the middle is the one which bears life's burden. It is so with us, and be-

tween the load above and the weight below the middle-class road through life is getting rough, and he, being the taxpayer, is beginning to ask: "Why should I be taxed directly and indirectly for the support of thousands of incompetents for whose being I am not responsible?" We build our asylums, hospitals, jails, and penitentiaries, and fill them with those who should never have been, and middle class supports himself, fattens upper class, and pays the bill for lower class. He asks: "What are you going to do about it?"

Suppose we now look at it from a medical standpoint. Preventive medicine is now our slogan; the laity is being educated, sanitation improved, free clinics established, laws passed, etc., with the end in view of preventing the individual from contracting disease. Why not carry preventive medicine a step farther and prevent the individual? Now that's not sentiment; that's what I would call a cold-blooded proposition—cold-blooded enough to make the chills run up and down a frog's back in July. But it can do no harm to discuss it. You all know just as well as I do the laws of insanity, heredity, atavism, etc.; but I want to ask you as man to man and physician to physician how many of you, knowing the taint of insanity to be in a family, have had the nerve to advise husband and wife against conception, explaining why you so advise? We see the syphilitic, the tubercular, the epileptic, the hemophilic, the mentally and physically incompetents, mate, marry, and breed all the way from six to double six, without raising a warning voice or advising the means which would prevent their being. How can you hope to cleanse the stream of life from disease when it is constantly polluted by such births? How can you hope to eradicate disease when such fertile soil as is being made by poverty, heredity, ignorance, and neglect is being provided in the children born of parents who have no reasonable right to be parents and maybe don't want to be parents? A great effort is being made along various lines to insure the birth of better babies. Well and good; keep it up. This proposition, while of a somewhat negative nature, is this: If we can't have a better baby, we can at least not have a worse one by not having one at all.

We have just had a better-baby week all over these United States. How about our proposition to have a no-baby week, a no-baby year, a no-baby life, when such seems best? Professionally, then, "What are you going to do about it?"

Lastly, let us look at it from a scientific standpoint, a view I have never seen in all my reading. I offer a reason for the prevention of conception which I believe to be original and the most far-reaching of all. I take it for granted that practically all will concede that among scientific men the law of evolution is considered true. (Now don't get uneasy—I am not going to step on any of your Methodist, Baptist, Presbyterian, or any other kind of religious corn; religion and evolution are perfectly compatible, can go hand in hand if you so desire.) Self-preservation is the first law of every living being; and if I were asked to give the second law, one just as universal, just as immutable, and just as eternal, it would be this: "The fittest or strongest will survive." You ask me what this can possibly have to do with birth control? I hope to make this plain to you in the time yet allowed me. Now there is no sentiment in this—in fact, I am going to start those rigors up and down that frog's spine again; but I am no more cold-blooded and remorseless than the nature which gave me being. Through the countless ages of the evolution toward perfection of every species the strongest lived, the weakest died. So it has ever been in the races and nations who have inhabited the earth. Nature was allowed to take its course; the strong grew stronger, mated with the strong, and begat the still stronger; the weak and incompetent, left alone, perished. This was nature's way of elevating the species, whether man or protozoa. Individuals were born; and if they were not inherently able to live, they were simply allowed to die. This is now changing through the world-wide philanthropic and humanitarian movements. The weaklings mentally and physically are being protected and saved from nature's sentence—death and elimination—are being kept alive by science and charity, to propagate others as weak, or, if two weaklings are mated, weaker than themselves. It would take the eye of a proph-

et to look down the dim vista of Time' ceaseless ages yet to come and see what the ultimate result will be. I cannot, and you cannot, do it, but we must know that there is an element of danger in thus going contrary to nature's terrible laws. If the weak are kept alive to breed more, and these still more weak, may they not in time get so numerous as to retard man in his progress toward his goal, the superman? In fact, are they not now getting a pretty heavy load? Is it not just possible that our great campaigns for the preservation of life thwart the aims of nature and destroy the compensation, as it were? Then would not birth control among this class restore the compensation? Who can say what the fate of some species of fish would have been if, instead of looking out for himself only, he had had to provide for and protect all the weaker ones of his species? Could that species have grown to perfection? Could it ever have grown to the next higher species in the scale of being? The reason that the question of birth control is assuming such importance is that we are now living in an artificial age, far from nature. Artificial liberties will require artificial restraints. It might be urged against this argument that there was no control of birth among the ancestors of man and that the proper evolution took place. To this I would answer: Neither was there control of death, and, besides, there is this difference in animals and man at birth: animals are practically capable of self-preservation and their instinct almost equals the knowledge acquired; while man is born absolutely helpless, with an intellect as void as the unwritten page, but with the possibility of unlimited development. This demarcation, high as heaven's wall and deep as hell, makes the further progress of man problematical and involves new issues, because upon the parent and the community devolve the care, preservation, and education of the child, which, if not properly cared for, preserved, and educated, results in a misfit.

Briefly then, in conclusion, to sum up and recapitulate: "What are you going to do about it?"

Not everybody can achieve greatness, but everybody can be clean.

INTRAVENOUS QUININE IN THE TREATMENT OF CHRONIC MALARIA.

CASE REPORTS.

BY JACK WITHERSPOON, M.D.,
Nashville, Tenn.

CASE No. 1.

Miss Lois G., aged 24. Farm demonstrator, living in Florida, but attending Peabody College this summer, was having chills and fever of irregular type.

Blood was examined at Jacksonville last fall and parasites found. Had taken quinine in four-grain capsules intermittently for seven months. Chills became more frequent when she came to Nashville. Quinine continued, but no relief from headache; loss of appetite; fever; when treatment suspended, would have a chill; fever, 102 to 103; sweats and headache; occasional vomiting attacks. No plasmodia found on first examination, but, after a chill, shower of parasites found in blood.

Ten grains quinine hydrochloride in 15cc. distilled water, given intravenously. Immediately patient fainted. Recovered, feeling chilly and nauseated. Did not vomit. Complained first of dizziness, then of severe abdominal cramps. Patient remarked that she was unwell at this time, and was having most severe uterine cramping, and flow increased. Morph. gr. $\frac{1}{4}$ hypo. and whisky given, and in a few hours patient was able to go home. We seem to have had here the well-known oxytoxic effect of quinine. No further similar medication given, but quinine in acid solution prescribed. Letter two months later says blood examined, negative, and no return of chills, fever, or headache, and health generally improved.

CASE No. 2.

Mr. B., aged 60. Is a resident of malarial section of this state, and has chills every summer and fall, usually relieved by large doses of calomel and "chill tonic."

This season has had severe attacks, and health has been especially bad. Appetite poor, and complains of constant headache, biliousness, etc. Spleen enlarged and hard, edge-shaped. After a week or more of freedom from chill tonic or

other quinine medication, a few tertian parasites found in blood. Rest in bed, dieting, careful attention to teeth and bowels, gave no relief. Quinine hydrochloride gr. 10 in 15cc. distilled water every second day was given intravenously and continued for two weeks, along with tonic laxative.

Dizziness was especially complained of within few minutes of each dose, and volume of urine seemingly increased. Headache disappeared, no more chills, and began to feel stronger as appetite improved. No return of his malaria this summer. He has removed from his former home. Fully recovered.

CASE No. 3.

Mr. W., aged 28. Sailor, white. Member of United States Marine Corps, with landing party in Hayti, November, 1915; contracted malaria, and was treated with quinine in capsules all winter.

No relief, and was discharged in March and sent home to Tennessee. Lost twenty-five pounds since March. Claims to have taken average of 20 to 25 gr. quinine sulphate daily from January to July. First day in Nashville—July 12, 1916—quinine was discontinued, and next afternoon had hard chill. Temperature, 104; sweating and vomiting attack.

Patient was put in hospital. W. B. C., 9,000; red cell, 3,600,000. Hb., 75 per cent; and large number of tertian parasites following the chill and on next day.

Urine negative. Spleen much enlarged and rounded edge, slightly tender, skin pigmented.

After a purge—4 gr. calomel—quinine hydrochloride gr. 10 in 15cc. distilled water was given in median basilic vein daily for five doses, then on alternate days for five more doses, when patient was discharged and sent home. Reaction from first dose was nil except for complaint of dizziness. Second dose was followed by vomiting; and after second dose no further rise of temperature, no chill or other complaint. No parasites found in blood after first dose. Urine showed no signs of irritated kidney, and there were no eye symptoms.

Appetite improved, and letter after two and one-half months reports better health than since last summer; gained fifteen pounds. His improvement was noted daily.

Two other cases showed no variation from the above. All our cases have been adults—one an old man with some degree of arteriosclerosis, but no nephritis. Blood examinations were made in each case and the parasites repeatedly demonstrated before the treatment was instituted. In no case could the parasites be found after the treatment.

One of the first questions naturally arising is: "What reaction follows the use of quinine intravenously?" Those we have seen in this small series are dizziness, nausea, vomiting, uterine colic. We have seen no urticaria, no temporary blindness, no renal hemorrhage. Toxic amblyopia is not infrequently reported during quinine medication; and while it usually follows large doses, it has been reported after two grains. This may be temporary, or, in the severe cases, it may result in sudden and absolute blindness. Permanent blindness is very rare. It is usually a temporary affair.

De Schweinitz, Buller, and others have contributed experimental work in the study of this phenomenon.

The use of quinine by intravenous infusion is not a new treatment of malarial fever. It was first proposed by Bacelli in 1894. From the literature one gets the impression that the Italian physicians use this method only in extreme cases.

Tyson quotes Krauss, saying: "It may be indicated in a comatose condition, and is quicker to act than the more common intramuscular injection of the quinine and urea salt."

Osler, page 258, mentions it only to say that its use is not without danger.

Deaderick, in his late work on malarial fever, also advocates its use in æstivo-autumnal infection and in certain cases of hæmoglobinuria.

Each of these writers advocates the use of the dihydrochloride salt, and advises large quantities of water—300 to 800cc. with the 10 or 15 gr. dose.

At the Richmond meeting of the Southern Medical Association, T. E. Wright, Iron Mountain-Missouri Southern Pacific Hospital, Monroe, La., reported thirty cases of black-water fever successfully treated by quinine in intravenous injection—10 gr. to 300 cc. saline solution. He described the results as prompt, and had no ill effects from the injection. Patients brought into his hospital in comatose condition, with hæmoglobin-uric collapse, seemed cured in eighteen

hours to a few days; and subsequent examination showed no parasites in blood, no blood or hæmoglobin in the urine. Of his thirty cases, one received three doses, ten two, and others one dose. Discussion of this paper brought out the fact that this form of treatment was not infrequently used in the Canal Zone and in India. Also its dangers received some discussion. One hundred grains at a dose was declared to be fatal to man, and even fifty grains (Bass) may prove fatal.

Gilchrist, in some test-tube hemolysis tests, found that a 15-per-cent solution of quinine in blood would cause a jellylike substance to be thrown down which he thought would result in thrombus and embolus. Hæmolysis may occur at 1-to-12 or 1-to-13 solution—an 8-per-cent solution.

The bimuriate of quinine contains $71\frac{3}{4}$ per cent of alkaloid, is soluble in less than its weight in water, and, when given by mouth, is rapidly absorbed (fifteen minutes) and eliminated by the kidneys in three to six hours. It seems less toxic than the other salts, and, because of these features, is the salt of choice for intravenous medication.

I have directed your attention to the warnings; to use quinine in large amounts of water or saline. In our cases we have used 10 gr. to 15 to 20cc. water, freshly distilled, and have seen no reason why this cannot be continued.

The Southern Medical Journal for April contains a further discussion of this subject by Wright, of Monroe, La. He has since his first report had 228 successfully treated cases, and warmly advocates this form of medication. He is now using 15cc. water. We have not seen the pernicious malaria, æstivo-autumnal or hæmoglobinuric, but have felt that quinine intravenously had a place in the treatment of that type of chronic malaria, which had proved resistant to other forms of medication. In a malarial section it is the habit of the victims to take small doses of quinine daily, and, when they begin to chill, to take large doses associated with purgative drugs—calomel, rhubarb, etc. This is the type that become malaria carriers. They have a muddy complexion, coated tongue, enlarged liver and spleen, and are under par in health. Often they have a spleen many times its normal size, yet it is difficult to find parasites in the blood smear because of their continued quinine medi-

cation. A quinine fast parasite probably means inadequate absorption.

When we give the treatment. Treating *acute malaria* and *malaria* are very different propositions. In acute the paroxysms are regular, and one may load up his patient either before the paroxysm (Torte) is in the decline (Sydenham) on fractional dosage until the acute stage is past, and, after this, saturation for two days each week for five or more successive weeks. This method has proven rather satisfactory. But in the chronic type the paroxysms are so irregular that these formulæ cannot be followed. We feel that if in intensive medication by the intravenous method we have a treatment which will clear up a chronic malaria in a few days, we have at hand a valuable method that should be more frequently used.

FROM THE SECRETARY OF THE EYE, EAR, NOSE, AND THROAT SECTION.

The Knoxville meeting of this section last April was a decided success. Those responsible for the program had provided an excellent one. The attendance was encouraging, but not as large as it should have been. Sessions were held Monday morning, Monday afternoon, and Monday evening.

Next April the meetings will begin on Tuesday the first day of the association meeting, and continue until the program is finished. The Secretary understood it to have been the will of the section when the motion was passed to have three sessions—Tuesday evening, Wednesday morning, and Wednesday afternoon. The next meeting can be made a greater success than the last one. Its success will depend on the program and the attendance—hence upon the men in the State who are doing work in this line.

This is written to ask them to volunteer papers for the program. The time is now getting short, and a hearty response is hoped for. Write a paper, if you can; if you cannot, come and discuss the papers that are presented.

Hoping for a rousing meeting, I am,

Yours truly,

E. L. ROBERTS, M.D.,

Secretary.

Tuberculosis and poverty go hand in hand.

TYPHOID FEVER.

We have not yet reached the time when typhoid fever is a rare disease. It is common enough so that every physician at some time of the year sees one or more cases. There are three points which form the excuse for these remarks.

The first is as to diagnosis. The diagnosis of typhoid fever can be made within the first week, and has been made by the writer before the patient was ill enough to go to bed. The natural conclusion from such a statement is that blood cultures are made. Not at all. The diagnosis can be made from a blood smear stained in a few minutes with Wright's or Hasting's stain. A person with fever and with no definite physical signs, whose blood reveals leucopenia, increase of the endotheliocytes (transitionals) above 10 per cent, absence of eosinophiles, decreased number of platelets, almost invariably has typhoid fever. The absence of leucocytosis alone in a febrile case raises strong presumption that the case is typhoid fever. The Widal reaction is of little value in the first few days of typhoid fever. Blood cultures are not easy to make, require a special technic and laboratory equipment. Even in the most skilled hands blood cultures are not always positive.

The blood-smear method is so simple that it may account for its neglect by the laboratory workers. A few clean cover glasses in a flat tin box, a blood sticker, and a pair of broad-end blood forceps compose the whole equipment. At the office are stain and distilled water.

So far as our rather wide experience goes, there are only two diseases with a somewhat similar blood picture which might be confused with typhoid fever. These are malaria and acute miliary tuberculosis. The discovery of the parasite of malaria in the stained smear settles the diagnosis in this case. In the other the course and physical signs must be the chief differential points.

The second point is diet. There are still some who adhere to the liquid, semistarvation diet. Abundant scientific laboratory and bedside proof is now at hand in favor of the high-caloric carbohydrate diet. No ill patient should be forced to eat against his will. If he will eat, he should have about 3,000 calories (20 calories per pound weight) in twenty-four hours. We have seen both sides of the picture, and we confidently as-

sert that the high-caloric feeding far surpasses in all respects the semistarvation diet.

The third point we hesitate to bring forward, as we feel that we are still experimenting. We refer to the treatment with intravenous doses of plain killed cultures of typhoid bacilli—the ordinary typhoid vaccine which is used in prophylaxis. The dose is from 50,000,000 to 100,000,000. It is repeated, increased or not, as indications suggest, every fourth or fifth day. We have given it once, then waited ten days or two weeks and repeated the dose. Certain cases are aborted as by crisis and go on to uninterrupted convalescence. Other cases are rendered much more comfortable after the initial chill, but the length of the illness does not seem to be abbreviated. Favorable results appear to follow only when there is a chill, sharp rise of fever, and subsequent drop in temperature below normal. Further, our best results appear to be gained when the vaccine is given during the second week. All complications are contraindications, so far as we now believe. We feel that this is a distinct advance in treatment. Reports scattered through the literature for the past few years have been generally favorable. The treatment is not new, but it is not generally used. It should not be undertaken without a full realization of the possible dangers which might ensue. So far as our experience is concerned, there are no dangers when the dose is properly graded at first.

We have had a rather alarming collapse following a drop in temperature to 96 degrees Fahrenheit, but the patient soon recovered from it and convalesced rapidly.

Typhoid fever is apt to be viewed as a disease which takes one or two weeks to diagnose definitely, leaves the patient a weak, living skeleton, and for which little can be done to shorten the course. All of these superstitions we have repudiated. We can diagnose typhoid early, our patients are more comfortable, and the fever is shortened in many. Further, they get out of their beds having lost little or no weight, and in three weeks to a month they are back at their former work. Have we or have we not advanced in the management of typhoid fever? Our answer is, most emphatically, we have.—*Editorial in Wisconsin Medical Journal.*

Pneumonia is a communicable disease.

THE JOURNAL

OF THE

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Devoted to the Interests of the Medical Profession of Tennessee

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EDITORIALS**SYPHILIS.**

The deeper we go into the study of syphilis, the more mysterious and the more confusing are our findings; and yet medicine has advanced more along this line, within recent years, than in any other. How long has it been since it was believed (at least, by some) that it was "a damned poor doctor who could not cure the clap?" And syphilis was regarded as the easier of the two to cure. Now we are taught that they both are incurable, and that stopping a symptom does not mean the stopping of the disease that produces the symptom. It would be interesting to know what the complacency of the past has cost us in human lives; for, as we are beginning to know syphilis now, its ravages surpass even the most pessimistic pictures described a decade ago. We have laid aside as medical garbage *parasyphilitic* diseases; for far beyond the bourne of time and place syphilis lives, and there is nothing *beyond* it. Diseases so called are active, living manifestations of the spirochæte, that, having once gained access to the body, probably never depart. This does not mean that all who contract syphilis will die from the direct, or indirect, effect of the disease; but it does mean that we should cast aside the feeling of false security that has been injected into the patient along with his dose of 606, and explain to him that he has made Danger his companion for the rest of his life, from which union there is no divorce.

In all the confusion of recent lore there is one fact that stands out harmoniously and undisputed, and that is, the earlier the treatment of syphilis is begun, the surer will be the clinical cure; and this includes an absence of so-called *parasyphilitic* manifestations. Early

treatment is dependent upon early diagnosis; so microscopic examinations of all suspicious sores should be made. No man on earth, I care not who he is, can make a diagnosis correctly in all cases with his eye and sense of touch. Soft sores may harbor the spirochetes and never develop characteristically. Waiting for the secondaries is a shameful loss of time; besides, they may never appear. The Wasserman is of great value, but may not appear for weeks after infection. To infer that general infection has not taken place because the Wasserman was negative would be a serious mistake, far-reaching in its effects. The most reliable way to make a diagnosis early is with the microscope; and if proper care is taken in getting the serum, mistakes will be few. In some cases an early diagnosis is impossible. Then we can only wait for the Wasserman or secondaries, or both.

In the treatment of syphilis, we should not lose sight of the object in view—that is, to kill the largest number of spirochetes in the shortest possible time. This means that the treatment must be individual, but the most important factor is to begin early. Many physicians have an idea that one dose of salvarsan is all that is necessary, but that is a fallacy. Many doses are generally necessary, and they should be associated with the administration of mercury in some form. Under this early intensive treatment the Wasserman may remain negative from the beginning, greatly to the patient's advantage. In this way alone can we assure him that his evening of life will be free from the dreaded late lesions of the nervous system, heart, and blood vessels. Although from a pathological standpoint a patient may never be cured, a clinical cure can be promised if his Wasserman is negative after one year of treatment and remains negative after a provocative dose of salvarsan has been given.

Our knowledge of syphilis is rapidly increasing, and its relation to internal medicine is becoming more manifest as we become more enlightened. It behooves us all to get more thoroughly acquainted with this subject, as it has a closer relation to the health, wealth, and happiness of the nation than was ever dreamed of in years gone by.

E. R. Z.

A QUESTION OF PROGNOSIS.

Among the sins for which the medical profession will some day be called upon to answer is the unwarranted and useless procedures that have been resorted to for the relief of certain forms of chronic deafness. It is not always easy to draw a line between what is called "chronic catarrhal deafness," supposed to be due to inflammatory processes in the mucosa and sub-mucous tissues of the middle ear, and otosclerosis, due to a lesion in the bone surrounding the labyrinth. The type to which we refer is marked by advancing deafness, with little or no changes in the drum and with no obstruction in the Eustachian tube. Some of these patients have septal deflections, spurs, etc., and some still retain their tonsils. If the ear troubles are due to nasal conditions, the matter would soon be settled if a series of cases were brought forward showing the benefit of nasal and throat treatment. P. McBride has recently called attention to this matter (*The Journal of Laryngology, Rhinology, and Otology*, August, 1916), and, after referring to the various plans of treatment suggested, says that "those who know anything of aural surgery know perfectly well that such methods never do and never did remedy the deafness." Yet many men of intelligence and honesty are correcting deviated septa, removing tonsils, etc., in the hope of relieving chronic deafness, to say nothing of those who inflate and otherwise treat the ears.

Two facts are pertinent—first, the worst sufferers with deflected septa, polyps, and other forms of nasal obstructions, will rarely be found to be the victims of chronic deafness; and, second, until they can present some results, the activities of those who practice these methods should be frowned on by the profession. When one single case of this character can be shown to have been helped by any plan of treatment, then a more hopeful view than the writer entertains will be justifiable. Of those benighted purists who think that nerve deafness can be helped by local treatment we have no time to speak.

E. C. E.

The United States Public Health Service issues free bulletins on tuberculosis.

The continuous liberal use of alcoholic beverages lowers efficiency and menaces longevity.

PELLAGRA.

After all the evidence thus far adduced concerning the etiology of pellagra is weighed, we must confess that the X in the equation is still as elusive as it was nearly two hundred years ago, with the chances apparently even that the disease will soon cease to be a problem in the United States.

We are all familiar with the work of Dr. Goldberger and his coworkers, which almost proves the dietetic origin of the disease on the one hand, and that of the Thompson-McFadden Commission, equally as convincing in proof of soil contamination as its cause, on the other. For the present discussion we may ignore the claims of other investigators. Thus far all those who have isolated organisms from the stool have failed to establish their claims.

It is significant that institutional workers form a group which is committed to the infectious theory. Thus, those who investigated the "outbreak" at the Baptist Orphanage, in Nashville, in 1910, checked up the food and food values at this and other public institutions, and ascertained, at least to their satisfaction, that the kind and source of foods was the same as those in which pellagra did not occur. They further claimed that prompt isolation of the "infected" inmates put a definite end to the incidence of the disease. Similar histories have been written of developments in other institutions, especially insane asylums, more particularly that at Peoria, Ill. Against this must be placed the observation that the insane are peculiarly susceptible to pellagra, just as pellagrins are apt to become insane. Also, scurvy and beriberi were formerly recognized as institutional diseases, the latter particularly being ascribed to undue crowding and poor hygiene.

The work of Jobling and Peterson is still under way, and no conclusions can as yet be drawn. The recording of a high percentage of cases in districts of Nashville where surface privies are used, as compared with the findings in the sewered sections of the city, is in accord with the views of the Thompson-McFadden Commission, and consequently does not form a third angle of the discussion.

Goldberger's claims can be summarized as follows: Six out of eleven convicts in Missis-

issippi developed pellagra after being fed on "vicious diet," all controls being negative. Patients not too far reduced or advanced recover promptly when placed upon "balanced" diet, even in the absence of all other treatment. Feeding pellagrous material to thirty-one volunteers at different places for a period of eleven months failed to produce even transient systems of pellagra.

The Thompson - McFadden Commission claims to have converted the pellagra plague spot of the United States into a health resort, and new cases are no longer reported. Members of the Commission tabulated the diet of pellagrins in Spartanburg, and decided that it was sufficiently balanced to meet anti-pellagra requirements. They report that most of them had milk and eggs, some of them "daily." It was not until the work of checking soil contamination had progressed sufficiently that the new cases of pellagra begin to diminish.

Here we are confronted with two series of well-conducted experiments by able investigators yielding diametrically opposite results. The results of the latter, moreover, tally with those of the Illinois Commission. There is a considerable shrinkage in value of these results, however, when we place against this account the fact that pellagra has diminished in other localities where such intensive privy reform has not been carried out. Further shrinkage in value results from contemplation of the fact that cessation of soil pollution would raise the resistance to diseases of all kinds. The Hazen theorem, based upon the Mills-Reinke phenomenon, gives numerical expression to the influence of water purification upon diseases not classed as water borne. Furthermore, the only evidence adduced of proper diet was a house-to-house canvass.

On the other hand, Goldberger and his associates, in the writer's opinion, have not eliminated the possible influence of locality. In his discussions Goldberger says the dietary habits of the North are essentially different from that of the South, especially that of the foreign element in New York City. (No one has ever controverted the assertion that no Italian has ever developed pellagra in the United States.) He says, also, that the dietary habits of country people differ from that of cities. This, he

thinks, should explain locality discrepancies. It would be highly desirable to attempt to duplicate the feeding experiments simultaneously at widely different points—say, in Louisiana, Colorado, the Catskills, and in Montana. On account of the marked seasonal exacerbations of pellagra as we see it in the South, it does not seem rational to exclude climate without taking the trouble to adduce experimental proof. The statement that the disease is not as prevalent in Southern cities as it is in the corresponding rural districts is an admission of its presence, and not proof to the contrary.

Last year Goldberger ascribed the dietetic "fault" to excess of cereal and deficiency of animal and leguminous protein; but now he believes the dietetic error to be due to absence of vitamins, which could, of course, be present as well in cereal foods. Bearing upon this point, the present writer in his public lecture upon pellagra as a member of a special commission of the State Board of Health (1911) sounded a preliminary warning against overheated breakfast foods. At that time the maize theory was much more in evidence, and in checking up this point it was found that most farmers bought market meal and comparatively few consumed home-ground meal as compared with the recent past, when pellagra was, at least so scarce that physicians had failed to recognize its existence. Inquiry by the writer at the largest local grist mill elicited the claim that their meal could not "spoil" because it was kiln-dried at 300-degrees Fahrenheit before being sacked for shipment. It is a well known fact that such meal does not cool "tender," like home-ground meal.

There seems to be danger of overworking the term "vitamin." Infantile scurvy is known to be due to absence of substances removed or inactivated by cooking, drying, malting, etc. This has to do with relatively low temperatures. The test for cooked meal is determination of the absence of enzymes, known as the "life" of the milk. "Dead" milk is said to cause scurvy. The scurvy of adults is due to absence of "life" in animal or vegetable foods. Fruit acids, probably because, circulating as carbonates, they diminish acidosis are recommended for the treatment of scurvy.

There is no proof that rice can be overcooked so as to produce beriberi so long as the aleurone layer of the grain is preserved. All of which goes to show that there is room for further research upon vitalizing food elements, and in the meantime we had better not get too far from nature in our dietary.

It would be well to accept the result of the experimental work here alluded to at its face value, without committing ourselves as to the etiological relationship of these experiments. On this basis we should lend our aid to movements for intensive rural hygiene and better dietetics.

W. K.

A CORRECTION.

In an editorial, "Department of Public Health in University Medical School," in last month's Journal, an error crept in which we desire to correct. It was stated in the editorial referred to that the new department of the University School of Medicine would be under the direction of Dr. Maltaner. The fact is that Dr. William Krauss is the head of the new department and that Dr. Maltaner is his associate in this most important work.

DR. J. S. CAIN.

As the Journal goes to press, word has been received that Dr. J. S. Cain, one of the oldest and most distinguished physicians of Tennessee, died at Sewanee on Sunday, December 3, 1916. Dr. Cain had reached his eighty-eighth year, and his whole life, until within the last year or two, was a busy one. As a practicing physician, a teacher, and a citizen, he was a power. His pupils and friends are scattered all over this and other lands. Dr. Cain was always a staunch supporter of medical organizations, and retained his active membership in his county and state societies almost to the end of his life.

"HOME-COMING" AT VANDERBILT.

The Medical and Dental Departments of Vanderbilt University were "at home" to the "old boys" during Thanksgiving week. A large number of those who went out from these two departments during the forty years of their teaching existence came back last week and had a good time renewing old acquaintance, making new ac-

quaintance, looking over the new plants, attending clinics, listening to lectures, going to dinners and the football game, and otherwise enjoying themselves. The faculties were delighted with the outcome of this first "home-coming," which will be followed by a similar affair each year in the future.

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

The American Academy of Ophthalmology and Otolaryngology will meet in Memphis on December 12-14. All meetings will be held at the Hotel Chisca. Memphis is highly honored in having this distinguished scientific body as her guest, and the whole profession of the state is proud that Memphis should have been so favored.

THE NATIONAL BOARD OF MEDICAL EXAMINERS.

Thirty-two applicants from seventeen states, representing twenty-four medical schools, appeared before the National Board of Medical Examiners when its first examination was held in Washington, October 16 to 21. Sixteen of the thirty-two were accepted by the Board as having the necessary preliminary and medical qualifications; and of these, ten took the examination. Of the ten who tried, only five passed.

It looks like the National Board of Medical Examiners means to see to it that the men who receive recognition by them are men who are worthy and fitted for the practice of medicine. More power to their hands!

The next examination by the National Board will be in June, 1917. Dr. J. S. Rodman, 2106 Walnut Street, Philadelphia, is the Secretary, and will gladly furnish information concerning the work and purpose of the organization.

THE SOUTHERN MEDICAL ASSOCIATION.

The Southern Medical Association met in Atlanta last month. The membership of this society is drawn from sixteen Southern States, and numbers about six thousand. Physicians were present at the Atlanta meeting in numbers equal to about one-fourth of the mem-

bership. The section on medicine was better attended than any like section of any medical organization in this country is attended. The Public Health Section was the liveliest body of the sort we have ever seen. The enthusiasm and spirit which was manifest everywhere were of a kind rarely seen at medical meetings. The Southern has come to stay and to grow, if the signs at Atlanta are worth anything at all.

A coterie of men and a combination of states which have long directed the maneuvers and activities, the plans and operations of an old and oft-successful political party discovered on a certain day in November last that the letters in New York, Pennsylvania, New Jersey, Massachusetts will not spell everything. Even when Illinois is put in, the possible combinations are insufficient. They also found out—for the very first time—that the Southern and Western states come pretty close to using up the alphabet. The South and the West are moving forward and up. The men of medicine in them are moving with them, as all who run should read.

FOR HELPING THE BLIND.

The following letter from Mrs. John P. Frank, Chairman of the State Commission for the Blind, is published here with great pleasure and with our earnest appeal to the readers of the Journal for their helpful coöperation with the commission:

Editor Journal Tennessee State Medical Association:

You will probably be interested to learn that, through the efforts of the Committee on Blindness of the Council of Jewish Women, we were, during the last session of the State Legislature, successful in having a bill passed for the prevention of blindness. The state, county, and city Boards of Health are lending their coöperation to enforce this law. A State Commission has been appointed by the Governor to perfect this work—not only along preventive lines, but along constructive ones as well.

At present our efforts are being concentrated on such persons as have already lost their sight—principally on the child below school age, and on the adult. The blind child requires careful training from infancy. Without this supervision, the mind remains inactive, and such children are often classed as defective, when in reality they are merely untrained.

The adult who has not already received some training in youth should be taught some congenial and suitable work, depending entirely upon the intelligence and temperament of the person. With proper training and direction, persons formerly state dependents become self-supporting and self-respecting. The field for blind workers is broad, including typewriting, massaging, piano playing, piano tuning, reading, æsthetic dancing, gymnasium work, rug weaving, chair caning, broom making, telephone operating, sewing, knitting, crocheting, etc. It might be of interest to you to know of the unique work done in New York by blind persons reading from the Braille type to convalescent seeing patients in the hospitals of the city.

The work of our State Commission is primarily to arouse public sentiment to the realization that this work cannot continue without financial support. We are anxious to procure an appropriation from the Legislature which convenes in January, 1917. To do this work efficiently, an expert executive secretary and a trained field worker are necessary.

We hope that you will be interested enough to want more definite data regarding our work, and we shall be happy to have you communicate with us. Your indorsement likewise will be of intrinsic value to our movement.

(MRS. JOHN P.) JESSIE H. FRANK,
Chairman of State Commission for the Blind,
Montrose Avenue, Nashville.

A NEW SUPERINTENDENT AT CENTRAL

Dr. A. E. Douglas, after fifteen years' service at the Central Hospital for the Insane, has resigned the superintendency, and has been succeeded by Dr. W. Scott Farmer, of Cookeville. Dr. Douglas has served as superintendent at Central since the death of Dr. J. L. Beauchamp, having been promoted from his former position as assistant superintendent when Dr. Beauchamp died. Under his administration progress was made, and his many friends regret his removal from a field of service in which he has worked so long.

Dr. Farmer is known to the medical profession of the state as one of its most capable and progressive men. He has been an active member of the Tennessee State Medical Society for a long time, and has also been one of the working members of all the other medical organizations in which he has been eligible. As superintendent of the Central Hospital he will receive the enthusiastic support and coöperation of the profession of Middle Tennessee.

NOTES AND COMMENTS

Hamilton County sent in one new name in November.

Dr. W. H. Baldwin, Memphis, is in a new office at 712-713 Exchange Building.

Did you read "Knowledge Comes, But Wisdom Lingers," in last month's Journal?

What has become of the man who used to say that chloroform is as safe as ether?

Dr. J. W. Handly, of Nashville, has recently had the degree of F.A.C.S. conferred on him.

"To him who hath," etc., is often quoted by "Associates," "Assistants," "Instructors," and the like.

We believe the millennium will be right here whenever a surgeon lets one of his slaves operate on a charity patient for him.

One or two friends have complained that the November Journal had too little "pepper" in it. Some folks don't like anything less lively than dynamite.

That doctor who has been showing you his passes and talking about his private car is about to be in the same fix as the rest of us—pay your fare and ride in just a common old Pullman.

Everything costs more, except soap, water, and sunshine. A liberal application of each of these cheap commodities will help the looks of things in lots of doctors' offices—and make them safer, too.

The fee splitters organized in St. Louis not long since. It has been suggested that they should confer the degree of "F.S." on themselves. "A.C." is all there is between "F.S." and "F.A.C.S."—"A Crook," that's all.

Mr. Louis R. Curtis, for eighteen years Superintendent of St. Luke's Hospital, Chicago, has been made President of Frank S. Betz Company. Mr. Betz will continue with the organization as Chairman of the Board of Directors. Under such splendid direction this great concern should—and will—win yet greater success.

American health resorts are having a greatly increased patronage as a result of the European war. Not only are "home folks" going to American resorts, but also those of other countries, who ordinarily would go to European spas. The Battle Creek Sanitarium, for instance, reports visitors from several European countries and from most of those in South America.

SOCIETY PROCEEDINGS

TRI-STATE MEDICAL ASSOCIATION.

The Tri-State Medical Association met in regular annual session at Memphis in November. Dr. J. L. Andrews was, of course, re-elected Secretary. The next meeting, after the first day, will be merged with the Southern, which also goes to Memphis in 1917.

THE SOUTHERN MEDICAL ASSOCIATION.

The next annual meeting of the Southern Medical Association will be held in Memphis, under the presidency of Dr. Duncan Eve, Sr., of Nashville, who was chosen at Atlanta for the chief officer of this great Southern society, much to the delight of his many friends.

MIDDLE TENNESSEE MEDICAL SOCIETY.

The two-days' meeting of the Middle Tennessee Medical Society, at Franklin, November 16, 17, was a most delightful occasion to those who attended. The programme was not too long; most of the essayists were on hand when called; the papers were practical; the discussion was prompt and liberal; the work of the presiding officer, Dr. W. S. Farmer, was

fine; everybody was in a good humor; the Franklin doctors did the handsome thing; and altogether the meeting was a success. The forty-sixth semi-annual meeting will be held at Fayetteville in May, 1917. Officers elected at Franklin were: President, Dr. Olin West; Vice President, Dr. B. T. Nolen; Secretary, Dr. Jack Witherspoon.

BOOK REVIEWS

MURPHY'S CLINICS. Vol. V., No. 5, October, 1916.
W. B. Saunders Company, Philadelphia.

This number of Murphy's Clinics shows just what a wonderfully varied work was done by the great surgeon, who has lately died, and how able he was to deal with whatever surgical condition was presented to him for treatment. Some of the subjects treated in this number are somewhat out of the ordinary. We take it that this publication will shortly come to the end. The last numbers should be secured and treasured by all surgeons.

PRACTICAL MEDICINE SERIES. Vol. VI., 1916.
General Medicine. Edited by Frank Billings, M.D.
The Yearbook Publishers, Chicago. Cloth, \$1.50.

This volume of this widely used "Series" is of unusual value, because it is a review of the literature of a year during which a great deal of knowledge has been gained through the study of disease in the army hospitals in the various European countries. Typhoid fever, dysentery, cholera, and typhus fever are given particular attention by the editor, and the work is up to former standards.

DIAGNOSIS AND TREATMENT OF SURGICAL DISEASES OF THE SPINAL CORD AND ITS MEMBRANES. By Charles A. Elsberg, M.D., F.A.C.S. W. B. Saunders Company, Philadelphia. Cloth, \$5.00.

The surgeon going in for surgery on the spinal cord should do what Dr. Elsberg has apparently done—i. e., learn perfectly the anatomy and physiology of the nervous system, not the cord and its membranes only. After he has mastered these and then learns the diseases and their attendant symptoms of the nervous system, he is qualified to do surgery of the spinal cord, provided he is a surgeon. To such a one Dr. Elsberg's monograph will be invaluable as a quick reference before an operation is undertaken. Reviewed from this standpoint, the book, in the main, is excellent. Viewed in a broader light, however, one gets the impression that it has been written for a more popular appeal.

For example, fourteen pages and nine illustrations are devoted to the simple procedures of spinal and sacral punctures; thirty-five pages to laminectomy, with thirty-two illustrations, two of which are in color. There are no less than nine pages of halftones of instruments, seven of which are of rongeurs. Then there is the cut of the skin incision and the cut of the skin closure, as if they differed from the same procedures elsewhere. It would seem that the author and publisher are trying to play both systems—to give the book both a general and special appeal. It appears to the reviewer that they have done neither satisfactorily. For the man who knows little of nervous diseases the matter is insufficient, and for the man who does know these dwellings on the trite are galling.

As evidence of Dr. Elsberg's sound advice, the following from the chapter on "The Indications for Laminectomy" should be weighed well by all attempting this operation: "In recent fractures of the vertebrae, with injury to the cord, laminectomy should be performed only when the patient's general condition is sufficiently good and when the symptoms make it clear that the spinal cord has not been entirely crushed at the level of the injury. To operate on a patient with a spinal fracture who has the symptoms of a complete crushing of the cord (except in the region of the cauda equina) is not only useless, but is sure to throw discredit upon a surgical procedure which is most valuable in the proper cases."

In the second edition, which we truly hope the book will reach, it should make a more direct appeal to the specialist, eliminating the trite, the commonplace, the unnecessary. There is a place for such monographs. G.

A soldier may have good feet, good eyesight and good brains; but if he has bad teeth, he can't eat. If he can't eat, he can't march near enough to the enemy to see him and use his brains to fight him.

How does a soldier get good teeth? By having good teeth in childhood.

How do children keep good teeth? Through being taught by their mother how to keep their teeth clean and having their teeth looked after while they are growing. This makes good teeth for future soldiers.

It would seem, then, as though the first patriotic duty of a mother was to keep her children's teeth in good condition. It is.

A book on "Exercise and Health" may be had free for the asking from the United States Public Health Service.

THE JOURNAL

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SUBCONJUNCTIVAL INJECTIONS OF MERCURY CYANIDE IN OCULAR THERAPY.*

BY E. L. JONES, M.D.,
Cumberland, Md.

Before proceeding with the paper, it is my desire to thank the chairman for the courtesy of his invitation that I read a paper before this honorable body on the subject he has assigned to me.

About nineteen years ago, in the near-by city of Atlanta, a paper was read before the Ophthalmic Section of the American Medical Association by Dr. E. J. Bernstein, now of Kalamazoo, Mich., on the subject of subconjunctival injections, which went thoroughly into the literature up to that time and quoted a large array of authorities. Likewise, scattered through current literature for many years past, have been references to using various drugs by injection under the mucous covering of the eyeball; but the practice, as a whole, did not become very general until the adoption of the use of the normal saline. The question has several times been asked the essayist as to how he happened to take up the injections of mercury cyanide in such quantities as to produce the terrible appearing reaction which, seen for the first time, usually causes the author and creator of such a condition to say, if he escapes calamity this time, it will be with him: Never—no, never—again."

To rob this communication of all formality, a title personal history will be injected. In 1903, feeling that there was a field of effort in which I had not entered, and having nothing systematic

at my command on the subject of injections, to which so many references were beginning to be made in current literature, I purchased a copy of Darier's "Ocular Therapeutics," hoping therein to find the enlightenment desired. A few chapters were read; and while much of it was entirely new, it struck me as being so bizarre in claims that serious doubts as to dependability of the same were entertained by me, and the book was put aside as one more addition to the literary "curiosity shop."

Some months later, after reading several articles in current literature on dionin, which was to me an unknown agent, some dionin was obtained; and its strikingly individualistic action, as characteristically specific as that of cocaine or adrenalin when they were first introduced, impressed me greatly and caused me to refer to Darier to see if he described these things. Not only did he describe them exactly, but it also appeared that he was largely instrumental in introducing the drug into ocular therapy. This caused a revival of interest in his other teachings; and, as it so happened, several bad cases of diseased or injured eyes presented themselves not long after. His injection practices were applied with much expectation, which the results obtained fully justified. His steps were followed until they faded out, and then a few steps were taken where there was no path, and it is my sincere hope that any one else following these tracks will not be led into error or trouble.

Previous users of the hollow needle seemed to desire to place a drug in a situation where it could not run out, using mostly weak bichloride from one to five drops, expecting therefrom the specific effect of such drug. Later, salt solution was adopted, as being free from the pain and reaction of the bichloride. Instead of seeking to

*Read before the Section on Eye, Ear, Nose, and Throat at the annual meeting of the Tennessee State Medical Association, April, 1916.

avoid the reaction, it should be encouraged by a large and irritant injection, as it is the increased lymph flushing, in my belief, that opens up the greatest possibilities as yet attained in the battle we are fighting against disease or sepsis. This idea, in a broad way, seems to have been given a great impetus by the teachings of Sir Almroth Wright and others in connection with the British Army service in the present European war, wherein extensive wounds and lacerations have healed faster under abundant saline dressings, the Dakin or hypochlorite lavage, or the packs with salt in gauze to make solutions as the lymph is created by the salt irritant. This lymph washes outwardly and sterilizes wounds which by no possibility could be sterilized by antiseptics externally. The lymphatic system, when working up to full capacity, is nature's greatest healer. It is due to this, and not to mercury or cyanogen as such, that the cyanide injections produce their good effect. No doubt there are many other means of producing this reaction equally as efficient, but my opportunities are too limited to undertake experiments along other lines. To bichloride, which has been so much referred to in our literature, the objections are, when compared to cyanide: It is much more painful, more toxic, and incomparable with all the alkaloids, as a rule, which may need to be used with it.

It has not been my practice to use injections in cases which I believed could be cured equally well without this procedure, although it might take much longer to do so by the usual means. For instance, a corneal ulcer which is peripheral, unless a virulent type of infection, might be treated for several weeks, when, by an injection, its cure might be counted on in a few days, inasmuch as a peripheral scar does no harm to vision. But if the ulcer threatens to perforate, or is central, where the least scarring is so detrimental to vision, its use is recommended as a first measure in any destruction of substance involving the true cornea—not in epithelial exfoliation. Likewise, in low-grade choroiditis, or violent choroiditis, if it can be proved that the affected spot is far removed from the macula area, the case may be allowed to run its course under the usual treatment by mercury or iodides. In my belief, this does nothing toward saving the spots already inflamed, but increases the resistance of the uninvolved area against further spread. But, given a case of masclar choroiditis

before destruction has taken place, it is my belief the only thing that can be depended on to save the reading vision is a massive cyanide injection, which will restore central vision that has been obscured as much as three to four weeks—not much after that time. Also in choroiditis where the fundus cannot be seen to exclude the macula from involvement, the injection should be made on the assumption it is involved. The same should be done in that form of hemorrhage at the macula only when not due to Bright's disease. In penetrating wounds of the anterior chamber, where infection is likely to occur, and in all cases where the ciliary body or vitreous are known to have or even remotely suspected to have been entered, the injection should be immediately made, as infection of the vitreous is a matter of only a few hours and its mischief cannot be undone. Several very remarkable observations, however, have been made of the power of the treatment to check vitreous suppuration in panophthalmitis, causing the pus to be limited to an area which, after discharging itself through an original wound or scleral perforation, permitted the volume of the eyeball to be preserved almost full size, the pain and symptoms of sepsis subsiding in any event in an astonishingly short period. The swelling of the panophthalmitis, added to the swelling of an injection, however, would give almost a fatal shock to one who had not gotten pretty familiar with swellings previously.

(Several previous papers have gone into the details of the composition of the injection, and many have asked the formula of the same; but my usual answer is that any one may use almost any formula, so long as he produces a sufficiently intense reaction. The basis is cyanide of mercury ranging from 1-5000 to 1-1000, of which two cubic centimeters, or half a dram, should be used, my standard of 1-1500 being purely arbitrary, but always adhered to.) To this is always added some acoin to lessen the pain. As acoin is precipitated by the slightest trace of alkalinity, a little boric acid is put in, and also a little salt, these three being ready mixed. To relieve the pain, not of, but following, the injection, from $\frac{1}{8}$ to $\frac{1}{4}$ grain of morphine is added, according to whether the eye is not or is already tender or painful. Generally about $\frac{1}{4}$ grain of dionin is also added, by which time the solution is about as concentrated as the water will stand. In tu-

berculous cases the water used is saturated with guaiacol, of which it will dissolve about 2 per cent. One prerequisite is long-continued and free use of cocaine, some of which is also always put in the unoperated eye. The duration of the pain following the injection does not average over twenty minutes in eyes not previously painful, but ranges from the extremes of a child permitting injections in both eyes in a bad case of double interstitial keratitis, without moving a muscle of the body or face or making the slightest moan, up to an adult howling from its use in one eye. It was formerly thought children required a general anæsthetic; but where a reasonable amount of self-control is present, this may be dispensed with. In an eye with increased tension, local anæsthesia is very poor and the ensuing pain correspondingly great. Where glaucoma is a complicating condition or a primary affection, a few drops of adrenalin are used instead of the dionin, and the basic solution may be 5 per cent sodium iodate, which Darier asserts to reduce tension. While I have used it a number of times, it is done because of his authority and no knowledge on my part of how it acts or whether it acts better than when omitted.

The conditions for which injections have proven more efficient than other established means of treatment are: Traumatism by contusion, producing vitreous hemorrhages of severe degree; dislocation of lens into vitreous; deeply penetrating wounds by shot, gravel, coal, nails, and operative instruments, etc.; ruptured cornea; various forms of protracted phlyctenular ulceration; severe corneal ulcers, including traumatic hypopyon keratitis, protracted non-ulcerative interstitial and deep keratitis, disseminated keratitis, iridocyclitis in early stages, choroiditis, syphilitic optic neuritis, after many operative procedures, as capsular discission, magnet operations, etc., galvano-puncture in retinal detachment, and in conjunction with established treatments not in themselves sufficiently sure, as curettement and cautery of rodent ulcer of cornea and any postoperative infection, like cataract.

My experience in lid trouble has been too restricted to make assertion of, although I have long believed it would be good in certain intractable chronic inflammations. It has been used a few times in trachoma connected with corneal ulceration, apparently with good result, leaving

the tarsal conjunctiva finely pitted, as the surface of orange peel looks. For some reason, trachoma is nonexistent in the section from which my work is drawn, except cases imported by foreigners, which seem to soon die out. Where the cornea is badly involved, the injection is made under the bulbar conjunctiva; but if not, the lid is everted and injection made just beyond the limit of tarsus under the conjunctiva of the lid. Dr. Coulter, of the United States Public Health Service Trachoma Hospital at Welch, W. Va., has manifested an interest in this treatment and is now submitting it to trial. The practice of Colonel Smith, in India, of using cyanide injections for trachoma, is known to the world generally.

This treatment was applied in one very intractable case of vernal catarrh, in the person of a young boy, three summers ago. So great was his relief from the injection of the first eye that he willingly submitted to the same in the other eye a short time after; and the manifestations of itching and redness, as well as the typical appearances, have been very much lessened ever since.

With so few exceptions as to make them negligible, my cases have all been office patients, in most instances returning to their homes, sometimes considerably distant, or going to friends or relatives nearer, within an hour or less from the time of treatment, having a cotton and gauze covering over the eye to hide it from the sight of others and take up the overflow of tears. A certain percentage of people have a morphine sickness, with vomiting, which detains them longer, maybe half a day, and then some after they get back home or into bed; but they would be sick just the same from morphine administered, for any other reason. No speculum or forceps is needed, the needle simply pushing up a little fold of conjunctiva as far from the cornea as possible in any space midway between the ocular muscles, after which a slight jab sends it under. Inject a few drops; and as the membrane bulges, push the needle deeper as the injection proceeds. After some practice, aside from proper placing of the needle, the thing could be done by feeling without the aid of sight.

You will not be burdened with a long array of cases; but as some have questioned the permanency of good results obtained and argued that a remote interference with the well-being of

the eye may take place later, leading to degeneration, a case treated nearly twelve years ago, and lately seen, will be described. In October, 1904, a man of about forty-five years of age presented himself with the entire cornea ulcerating, with necrotic areas in it as dense as butter and apparently involving the entire thickness of the cornea. He was thin, anxious, and pallid-looking, and said he had eaten and slept but very little for several weeks and had slept but one night of the past seven. It had originated in a slight abrasion of the cornea in his work as a carpenter six or eight weeks before, which did not lay him off from work for two or three days. The severity of the infection may be inferred from the fact that the conditions found when he reported had developed in spite of efficient treatment by an expert oculist according to accepted methods. It was explained to the patient that he had arrived at a stage when the only thing to do would be to take the eye out and end his suffering, as he would have a dense leucoma if the eye was eventually healed, and it would be of no service. It was also explained to him that a new treatment, which had not as yet gained any general recognition, might induce healing, with a chance of a not too unsightly eye; but the likelihood of useful vision was negligible. He was given several injections at intervals during about four to six weeks, as memory runs, in conjunction with actual cautery at times, and the usual atropine antiseptics, hot bathing, etc., finally healing entirely. When the patient dropped into the office several months afterwards, having regained his former color and weight and shaved the whiskers which are allowed to grow during sickness or suffering, he was not recognizable as the same man, except by his voice. Instead of the dense leucoma anticipated, his cornea was fairly clear; and he has ever since had sufficient sight to read print somewhat finer than ordinary newspaper and sufficient far-sight to recognize people across an average street. It is one of the merits of this treatment that regenerated corneal substance is clearer than under other methods.

It is my hope to be able to present to you a case illustrative of the use of this treatment in apparently destructive traumatism of the globe, according to my recollection of the circumstances and conditions, supplemented by that of the patient.

In March, 1909, Mr. McC., about nineteen, of

Bristol, Tenn., was struck in the eye, with history as detailed in his letter:

"ABINGDON, VA., March 29, 1916.

Dr. E. L. Jones, Cumberland, Md.

"DEAR DR. JONES: Sorry to be so neglectful in not giving you the information asked for in your first letter.

"The facts, as far as I can remember them, are as follows:

"My eye was injured by a door at Holston Extract Company's plant, in Bristol, February 1, 1909, swinging shut as I was entering and the latch on the door striking me in my right eye. I at once noticed the sight of the eye was impaired, but did not consult a doctor until the next A.M., when I noticed I had very little vision from the eye. Dr. C. told me, after the first glance into my eye, that the retina was detached and that there was no cure for such; also Dr. S. pronounced my case detached retina. In about six weeks you treated my eye, and at the time, you remember, I could hardly distinguish an electric light held in front of me; and inside of thirty days I could notice a gradual return of sight, which gradually grew stronger, until now I can read the finest of prints with the injured eye—in fact, can read any print with it that I can read with the other, which has always been good.

"The smallest print I am inclosing can be read with perfect ease at arm's length, and the larger twenty feet

"I hope to get things arranged to be with you in Knoxville, Monday A.M.

"Will see you en route Sunday.

"Hoping this information will be of some value to you and that I can be with you Monday A.M., I am,

"Most respectfully,

"[Signed] C. P. McCORMICK.

"P.S.—My age at time of treatment was nineteen."

A former resident of this community, who was living in Bristol and was greatly interested in the young man's welfare, wrote a description of conditions as best he could and asked if it was likely that any good might be effected by still further efforts. As it seemed probable that this new treatment might be helpful, his coming for trial was sanctioned. On reporting for examination his vitreous was so opaque from the old hemorrhage that the examiner could not see into it nor the patient out of it. One injection was made and the patient remained three or four days, during which time no change was evident. He was put on the mercury with chalk mixture, elsewhere alluded to, and permitted to return home to continue the powders a month or two. The sample of print inclosed as near test is fine print cut from a magazine, and the far test Snelli No. 20—apparently perfect vision far and near.

To those of you who have a troublesome case of chronic episcleritis the following narration

may offer useful suggestion: In September, 1914, a frail woman, fifty-six years of age, reported with eyes that had been weak and painful for several months, due to a chronic episcleritis encircling one cornea, a zone of about 1-6 of an inch being bluish, elevated, and tender. The chronic nature of the trouble and its intractability to medical treatment was explained; but as there was no urgency, she was given a mixture of potas. iodide and sod. salicylate, and advised to return in a month for injection if not better. Owing to circumstances, etc., she did not come back for seven months, and conditions were in no wise better. After thoroughly cocaineizing the eye, a series of spots was burned by actual cautery around the infiltrated circle, like spokes in a hub, and an injection given. The pain was no more than usual; but, due to an idiosyncrasy against morphine, she developed the worst case of vomiting I have ever seen. She could not leave the couch at the office to go to a hotel across the street until late in the day, the treatment having been given about 10 A.M.; and, in spite of free drinking of hot water to wash out the stomach, after she went to bed with a mustard plaster above the stomach and carbolated bismuth and cerium oxalate in it, vomiting did not cease until midnight. The improvement that followed was so marked and rapid, however, that at the end of a month or so, when she came back, the condition was quite entirely relieved. As she was preparing to remove to a distant part of another state and feared a relapse, another punctate circle of cauterization was made as a precautionary measure against relapse.

In illustration of penetrating foreign bodies with resultant inflammation, the following cases are cited:

Mr. C., a large man of forty-nine years of age, had a mine blast go off in his face, slightly scratching the right cornea and having a piece of coal the size of a large pinhead penetrate the cornea of the left eye at the root of the iris. When he came about two weeks afterwards, the eye had iritis, and was so tender to touch and spontaneously painful that iridocyclitis was feared. He had slept very little for several nights. The lens was cataractous, the iris bound down to the same in its entire circumference, in the center of which, imbedded in the lens, was the particle of coal. In its passage in the same plane with the iris it had removed a narrow seg-

ment of the same from periphery to center, through which the cataractous lens showed as plain as any pupil. He was told that iridocyclitis would probably develop and destroy the eye, and that, if it did not, extraction of the cataract would possibly end in failure, or, at best, be a considerable risk to run and cause much loss of time, and advised to have an injection. This was given, with only slight and short pain; and, after having the eye tied up, he left the office, returning the next morning, feeling perfectly free of pain and reporting the first good sleep for several nights previous. He returned on October 2, everything quiescent. He returned again on December 16, with the cataract completely absorbed, the fundus being clearly visible through the traumatic pupil and the coal vanished from sight somewhere. He could count fingers at 4 feet; with $11.^{\circ}$ D+S vision=20-50—S+16. $^{\circ}$ D. Jaeger No. 2. His other eye had only 20-30 vision. The complete absorption of the lens at this late age is most unusual.

W. C., aged eighteen, came at 5 P.M., March 15, 1916, having had his face penetrated by particles from an explosion in a shack near a coal mine about 12 M., due to nine dynamite caps getting accidentally fired. The upper lid of the right eye had a cut through the skin, showing muscle tissue protruding, and the eye a linear cut 1-10 inch long in sclera near the outer corneal margin. Vision was reduced to partial counting of fingers at half a foot; tension reduced, and depth of eye could not be seen into until after the pupil was dilated, when the upper portion of the vitreous was observed to be filled by dense hemorrhage, with sharply defined, as against diffused, border. As the vitreous had in it almost beyond doubt a nonmagnetic foreign body, which could not by any possibility be removed and which would soon likely cause destructive inflammation, the usual injection of cyanide, dionin, and morphine was given, causing severe suffering, which subsided in twenty minutes, but was followed by morphine sickness and vomiting when he started to leave shortly after six. This abated soon, and he went to his home in a near-by town, returning on the 18th. There had been no pain; the eye was not tender; and a glimpse of the pupil through swollen lids showed clear, with ability to count fingers about two feet. He came again on the 20th, able to open the lids a little; no pain or tenderness; counts fingers

five feet. Ophthalmoscope shows haze throughout the vitreous from diffused blood. To aid in absorbing this, I gave a prescription used for many things, containing one grain each of mercury, with chalk, Dover's powder, carbonate of iron, and aromatic powder compound, three times a day. March 23: Has had no pain or tenderness; anterior segment eye perfectly clear, still too much diffused with blood and floating particles to see fundus. Next visit, March 25: No pain, tenderness, or inflammatory redness. Counts fingers at ten feet. Vitreous still too hazy from blood remnants to permit view of fundus. Patient last seen on March 31. V=20-100. With dilated pupil, the vitreous showed black from blood pigment; and only when looking up could a red reflex be gotten at the bottom of the eye. The retina must be perfect to see so well through such dense opacity, which will absorb in time.

That penetrating, nonrecoverable foreign bodies still present the almost hopeless outlook accorded them in the past is testified to by the discussion on injuries to the eye in warfare before the Ophthalmological Society of the United Kingdom for 1915; and, furthermore, the ultimate loss of many of those from which a magnetic body is removed by subsequent detachment of the retina, although they are at first apparent successes, is brought out in the discussion on detachment of the retina by Mr. Gustavus Harttridge. Hence, if trial on an extended scale should prove that an injection at the time of injury or operation so tones up the eye as to enable it to resist these degenerative changes, a great step forward will have been taken.

The following case, the like of which I have never seen before, is believed to be a tuberculoma of the retina: D. M., aged eleven, was brought on November 16, 1915, for symptoms of asthenopia, interfering with comfortable attendance upon school, etc., which was due to refractive error in seeing of left eye. The right eye was discovered to have only perception of light, with ability to partially count fingers at half a foot. A soft, globular, perfectly white tumor, apparently between the macula and optic nerve, neither of which was recognizable, occupied a large portion of the fundus. It did not seem to have any limiting membrane, but looked like steam condensed on a cold day into pure white vapor. His father was advised to permit

a trial of injection to see if it would diminish the tumor, or at least restrain its growth and permit safe retention of globe, with possibly some restoration of peripheral, but not central, vision; and he consented to the same. The boy bore the pain bravely, but suffered much from nausea and vomiting from the morphine, returning home a good many miles in a huckster's wagon on the afternoon of the same day. He returned on December 23, vision equaling fingers at three feet on temporal side. He mustered up courage to submit to a second injection, which pained severely for nearly half an hour, followed, as before, by nausea and vomiting from the morphine, which lasted several hours. He returned on March 9, with vision equal to fingers at six feet. Tumor possibly absorbing. He made no protest against a repetition of the injection, which this time had also the guaiacol water, until he climbed on the table, when his courage failed him, at which no one can wonder. Had there been facilities and helpers at hand, a general anæsthetic would have been given; but as they were not, the injection was made in spite of considerable struggling, which is only mentioned to emphasize how easy it is when a patient is quiet. The patient is now taking the mixture of mercury with chalk, etc., as elsewhere described. It will be several months before the final outcome will be known; but the progress to date is equally satisfactory with that of a large conglomerate tuberculoma of the choroid treated some years ago in a woman forty years of age and reported in a former paper, in which the tumor ultimately absorbed, leaving a large cicatrix at its site and quite a useful amount of vision.

A state of affairs frequently encountered in varying degrees of severity is illustrated in the following case: M. J., aged seventy-six, came on November 18, 1915, with all of the cornea of the right eye, except the upper circle beyond the pupil, destroyed by a necrotic ulcer, due to infection of a slight scratch of the cornea made by fuzz off weeds in a field with the discharge from a chronic suppurating tear sac. The other eye was blind, except for a spot around the fixation point so small that he could not go on the street without an attendant to guide him. As his hope of sight hung on the ability to preserve the little rim of the cornea for a future iridectomy, a method often resorted to, of combining several procedures to get the surest possible results, was

adopted. After cocaineizing the eye, the lachrymal canaliculi were split into the sac. Swabs dampened in adrenalin and covered with pulverized cocaine were then held in the sac for several minutes, after which the sac was completely destroyed by a round electro-cautery point, rotated in the body of the sac, and also its portion above the commissure of lids designated as the "cupola" of the sac, which is also my method of obliterating suppurating tear sacs under ordinary circumstances. The ulcer was then freely burned up to sound tissue with the same cautery, and the routine subconjunctival injection made. Notwithstanding this sounds rough, he suffered little pain by the operation, and none after; whereas he had suffered greatly for a good many days and nights previously. Argyrol in 25-per-cent solution was given for home use, and the pouch where the sac had been was swabbed out with the same at each visit until the cavity filled up. Healing proceeded as fast as possible; and as certain parties were anxious for him to go home, he left on December 7 with the cornea nearly cicatrized. As the eye had a tendency to hardness, he was given an eserin solution to use at home. The hope of saving the peripheral cornea was attained; whether the subsequent efforts to restore vision by an optical iridectomy when he returns in the spring will be a success, remains yet to be seen.

A case of double syphilitic optic neuritis is the following: Woman, aged about thirty-five, came on December 27, 1915, with sight rapidly failing in both eyes, due to optic neuritis, with some vitreous haze in both eyes. She had leucic sore throat and mouth. For certain nonmedical reasons treatment was not started until the next visit, on December 30, during which short interval vision had declined in the right eye from 20-75 to 6-150 No. Jaeger, and the left eye from 20-50 to 12-150 Jaeger No. 16. Injection was given in the right eye, followed by the usual pain and an unusual morphine nausea. January 4: R. V. = 20-100 J. 14, L. V. 20-40 J. 12—an instance frequently observed of beneficial effect on the other eye in bilateral affections. January 11: L. E. V. = 20-40 J. 8. Same injection given left eye. January 19: R. V. 20-75 J. 6, L. V. 20-50 J. 1. January 27: Each 20-40. General treatment by her physician had not been promptly instituted for nonmedical reasons, but

was now under way. February 28: R. V. 20-75 + J. 2 — L. V. 20-40 — J. 1. March 14: R. V. 20-40 S. + 40 J. 1 — O. D. hazy; fine haze around cornea. Fearing iritis, the pupil was kept dilated by atropine; L. V. 20-40 S. + 40 J. 1. Fundus clear; mouth healing. March 21: R. V. 20-50 + S. + 40 J. 1 — L. V. 20-30 — J. 1. Feels good. The apparent inconsistency between far and near vision at varying times seems to go with some of these retinal or nerve diseases. This patient being nearly a total illiterate, also does not give the fullest measure of vision on letter tests.

A similar case, limited to the right eye in a man, aged twenty-two, following close after an iritis from which a perfect recovery was made, was given the injection on March 15, 1916, vision being 20-100 + J. 14 S. + 4.0 J. 6. He did not suffer any pain or morphine nausea, and stated that his eye merely felt queer from the swelling. It is quite often the patients say the pain is not worth mentioning, as in a recent case of punctate keratitis in a man who had been using local and constitutional treatment for about two months with no apparent benefit. It requires from three days to a week for all swelling to leave and about a month for all bruised appearances at the site of injection to leave. Accordingly, such cases as require more than one injection are seldom given them at closer intervals than one month. In the above case on March 20 far vision was almost the same, near vision decidedly reduced, and vitreous haze increased; but on March 25 far vision was slightly raised and near vision with S. + 4.0 Jaeger No. 1, and vitreous almost entirely clear. Atropia and dionin are used in the eye at each visit, and the patient is taking specific treatment from his physician. Last seen on March 31: Vitreous quite clear and vision 20-75 very clear; Jaeger No. 1, with S. + 4.0.

In conclusion, my wish to not be overenthusiastic in the use of the treatment advocated in this paper has caused me to abstain from it in several instances where it was believed the exigencies of the situation did not demand it, and too late it was revealed that it should have been done by the loss of sight from infection following accidental or intentional penetration of the eyeball; whereas in no case of using it has any resultant harm therefrom been proven.

DISCUSSION ON THE PAPER OF DR. JONES.

DR. GEORGE H. PRICE, Nashville: Mr. Chairman and Gentlemen: If I had not learned anything in the use of agents from my friend, Dr. Jones, except the use of subconjunctival injections, I would feel as though I had derived more from my association and contact with him than from any source I know of at present, especially when it comes to conditions of the kind that can be reached by the simple procedure which he has given us.

Dr. Jones called my attention to the book to which he referred—namely, to the work of Darier on this subject—some years ago. I proceeded to get the book at once and study this procedure. I was timid, to begin with, and was doubtful as to what the results were going to be, as it seemed to me a procedure which was somewhat risky. I had seen subconjunctival injections used. I had heard of their use, and I had one experience in consultation with a friend of mine who used subconjunctival injections of bichloride of mercury, and that patient suffered so greatly after the use of the remedy that I concluded I would not undertake that line of treatment. However, my friend, Dr. Savage, began to use this method before I did; and I thought if he did not get into trouble with it, perhaps with him to back me up and what I had learned in regard to it from Darier and my friend, Dr. Jones, I would try it.

The first case I had in which I concluded to try this agent was a man who was suffering from a hyalitis so dense that it was with difficulty that he could see even the motion of the hand, a foot or two from his face, in the lower field. I gave him subconjunctival injections both of the cyanide of mercury and at intervals injections of the citrate of sodium. I had him under observation six months—from June until December. The latter part of December I discharged him with vision 20-20 in the eye in which he was almost totally blind before the agent was used.

The next patient I had was one about eighteen years of age, who had just entered the university and found great difficulty in carrying on his work. I saw him, and could make out no assignable cause for his trouble for a few days; but after opening up the pupils and examining the eyes thoroughly, I concluded he had an irritation in the central portion of the choroid in each eye. I took him to my friend, Dr. Savage, who confirmed my diagnosis. I gave him a double injection. His vision had already gone down until it was then 20-40 or less. He recovered his vision, and has good vision now, although he had a bad defect in vision. His vision now with proper lenses is practically normal.

The next case was a lady who was one of the members of the corps of the Carnegie Library. She was myopic. Her vision began to get less and less until it became distressing; and she was greatly concerned, and so was I. We determined finally she had central choroiditis developing. I gave a subconjunctival injection of cyanide of mercury, and her vision when last seen was 20-20 plus.

Speaking of cases of optic neuritis, I have had two cases that are remarkable—not that both of them recovered their vision, because they had passed the point when such a thing as that was possible. They were both in the atrophic stage. The first, a man, was led into the clinic, as he could not see to get about. I injected only one eye, because the other eye was gone, and with the eye in which I gave the injection he was only able to perceive light and motion of objects in front of the eye. After one single injection, one week later, this man could count fingers at ten or twelve feet and see to get about. The second was a negro girl, brought to the clinic by an attendant, whose vision was reduced to fingers at two or three feet. She was given one single injection, and at the expiration of one week she was examined before the class and could count fingers entirely across the operating room, nearly twenty feet.

The results which are obtained by this method of treatment are simply wonderful.

I have had during the past several years a dozen or a dozen and a half—maybe more than that—cases of inflammations in the choroid, the optic nerve, and in the ciliary body with hyalitis, in which I have resorted to the use of subconjunctival injections; and but three of these cases have not responded to the treatment. One of them was a woman, near sixty years of age, who had lost an eye from choroiditis some time in early life. It was discovered thirty years ago she was blind in one eye. Two years ago she came to me, and I discovered choroidal trouble. It was then far advanced peripherically, more disseminated than central, and rapidly encroaching upon the center, so that vision was much reduced. This condition was arrested. The patient has vision enough to do some writing, some reading, and some sewing; but we did not relieve her completely.

To another patient, an old man, I gave several injections. He had a detached retina. He passed from under my observation, but the last time I saw him his vision had not improved.

I recall one other case in which vision returned and was most remarkable in its results. This patient was a woman, about forty-eight or fifty years of age, who had lost an eye from central choroiditis twenty years previously, who developed an attack of central choroidal inflammation. I gave her one single injection, which stopped the inflammatory process. I saw her a few days ago, and her vision then was practically normal.

I have tried these injections not only in cases of this kind, but in other cases. I have tried it in cases that were suffering from beginning panophthalmitis, and did not succeed. It was my fault, perhaps, because I have the greatest faith in the reports Dr. Jones has made in regard to the cases of this kind.

Another case came under my observation only a few weeks ago—I think it was in February. Dr. Savage is familiar with that case, having seen the boy three or four years ago when he was suffering from a bad injury of his left eye. Enucleation of the eye was advised. It was refused upon the ground that treatment might save the eye, if not sight. We saved the eye, but

the eye became totally blind; and about the first of January, 1916, or the latter part of December, 1915—I forget exactly which—he developed a sympathetic irritation in the other eye. That brought him to Nashville in February or the first of March. I enucleated the old offending eye, and gave him a subconjunctival injection of cyanide of mercury. I saw him about one week ago, and his vision then was 20-20 minus where it was only 20-200 one month before.

I have only words of commendation for this method of treatment. I have not used it as extensively as Dr. Jones; but I have found that in certain cases, especially those of the character to which the essayist has referred and those to which I have referred, that it seems to be the *sine qua non*.

DR. O. DULANEY, Dyersburg: We are certainly indebted to Dr. Jones for coming here and presenting this excellent paper.

What I want to say in regard to subconjunctival injections is that the main thing in getting rid of infection in any location is to break up the infiltration. We may not be able by medicinal treatment to reach the vital part or reach the tissue by the ordinary routine of giving medicines that we ordinarily prescribe; but if we remember some time ago seeing an article by Dr. Bass in the American Medical Association Journal in regard to giving quinine for malaria, it will explain to a certain extent the condition that exists in these eye infections. The main point is, we want to reach the infiltration itself. It does not make any difference where we inject the medicine, we get the same results; and, therefore, I am opposed personally to the use of subconjunctival injections when we can get the same results by subcutaneous injections of cyanide of mercury or whatever form of mercury we want to use. It is less dangerous by far. I have tried both forms of injections, and I have not failed to get the same results by injecting the medicine subcutaneously or into the gluteal muscles. I have obtained good results by this method when I could not get them by subconjunctival injections. This method serves the same purpose, the same object is arrived at, and you can achieve results in the same way by storming the infiltration itself and breaking it up.

Dr. Bass stated in the article I have referred to that in the pernicious forms of malaria many of the patients died because they never got the effects of the quinine, but by injecting the quinine intravenously in the meningeal forms of malaria it broke up the infiltration. We get a more rapid absorption of the medicine, and that is the object desired. I believe we can get as good results by using this remedy subcutaneously or intravenously as by subconjunctival injections. That has been my observation; and I think if you will try it out, you will be just as successful in that method as you will by resorting to subconjunctival injections.

My first experience in using subconjunctival injections was in a case that Dr. Ellett saw with me, and the injection was made by him. The only serious results I have ever seen were from shrinkage of the eyeball itself. Others may not have noticed that, but I have.

DR. CLAUDIUS M. CAPPS, Knoxville: I did not fol-

low out Dr. Jones' suggestion in giving cyanide of mercury injections all the way through. I understood him to say that he used morphine in conjunction with the treatment. I do not understand why it is necessary to use it in connection with the cyanide of mercury. We have used cyanide of mercury for a number of years with good results, and why we should combine morphine I do not understand. There is no more reaction from the inflammatory condition, but there may be more absorption in giving subconjunctival injections as a direct remedy where the tissues are involved. We know that mercury given hypodermically or by the stomach certainly does not have such an immediate effect as it can have locally in the eye where the tissue is involved. There is a more ready effect, it is more lasting, and it would take less of the remedy to reach the pathological condition.

I would like to hear Dr. Jones explain why he uses morphine.

DR. CHARLES HUFF DAVIS, Knoxville: A question of physiology arises in my mind in connection with the discussion by Dr. Capps. I was wondering if he thinks that injecting morphine under the skin where the pain is, is the way he gets the effect of the morphine, or whether it is a digestive process that goes to the stomach and goes back again to where he wants the effect of allaying the pain. I think his physiology is a little off, although I am subject to correction.

DR. GEORGE H. PRICE, Nashville: In discussing this question there is one thing I wish to call attention to, and that is this: that in the eye we have got the most peculiar structure in the entire human organism. We have a globe here, where outside of the globe and in its tunics the circulation is chiefly blood, while inside the globe the circulation is chiefly lymphatic. The whole posterior part of the eye is filled up, as a great lymphatic space, with the vitreous. Every bit of material secreted into the eye is through the lymphatic system. When you have a disturbance inside the eye, you cannot reach it nearly so well except by flushing these great lymphatic structures. If this should be the eye [indicating] in a horizontal direction, if you inject between the superior and external rectus far back upon the globe of the eye 5, 10, 20, or 30 minims of cyanide of mercury, you balloon the conjunctiva so that it becomes a mass as big as your thumb. Almost within a few minutes this circumscribes the eye, so that we have the big balloon thinning down and spreading out into the surrounding tissues. It infiltrates into all tissues surrounding the eye, so that these patients are infiltrated lymphatically, in some instances, from the very roots of the hair to the collar bone. When you inject cyanide of mercury into the lymphatic space, you get the immediate results of stimulation of the lymphatic system by an agent which causes a marked outflow of lymph. You get this lymph from these agents—namely, cyanide of mercury and dionin. Dionin is the greatest of all lymphatic flushers. Therefore you have the eye practically surrounded and bathed in a continuous bath of lymph, which is constantly undergoing changes and reaction, which does not last for only a day or two days,

but in some of these cases it may fluctuate up and down for days. The longer it continues, the more effective it seems to be. Of course if we could get it in closer than in the subconjunctival space, it might be better; but it will not do to inject it inside the eye itself. After injection, your patient then has an eye which rests practically for days in a lymphatic bath surcharged with products which are changing. When you stir up the cornea by injecting something that excites the lymphatic supply, you convert it into a flushing tank, sending in new products of lymph.

The reason it does good in the sheath of the optic nerve is because the lymphatic space extends all around the optic nerve; and when there is optic neuritis, that is the way it reaches it.

DR. G. C. SAVAGE, Nashville: I heartily indorse, from an experimental point of view, every word uttered by Dr. Jones and by Dr. Price in this discussion; and, with these few words, I will call upon Dr. Jones to close the discussion.

DR. EMMETT L. JONES, Cumberland, Md. (closing): In answer to Dr. Capps why I use morphine, I will say that in using injections in this quantity the acoin which is put in the injection diminishes considerably the pain. The cocaine does not diminish pain, but diminishes the discomfort perhaps of manipulation of the eye and the puncture; but the probabilities are the cocaine is not effective. With the sudden distention of the tissues, the patient experiences the most intense pain, which may last for a long time. In a discussion of a paper which I read on this subject before the American Medical Association some years ago, Dr. Savage and others who took part dwelt on the severity of the pain that these patients have; and Dr. Fox spoke of when he saw Darier use it in Paris, and said we could not use that in America and live—that our patients would not stand for it by reason of its severity.

I began to use morphine in the arm or leg afterwards, making a separate procedure of it, and I said: What is the use of doing that? Why not put it in the eye? The more we put in the injection, the more we set up the reaction we wanted. The acoin is not an anæsthetic, but an analgesic; and Colonel Smith, in India, formerly gave his patients a large opium pill; but now he does not do that. I had the good fortune to receive a very gratifying letter from Colonel Smith, and find he now uses half a grain of morphine half an hour before giving the injection, so that the patient can tolerate more comfortably what is to be done. Dr. Steel, of Chattanooga, does the same thing. He gives morphine in advance. These procedures can be carried out even in the cases of children. Dr. Black, of Denver, tells me that he uses a little novocain in his injections. We can render the operations painless by injecting cocaine, novocain, or alypin, and in five or ten minutes afterwards use an injection of cyanide of mercury without the injection of the morphine, the objection to which is, it requires using the needle twice. I have had three or four cases that were particularly susceptible to the effects of morphine.

Dr. Dulaney stated that we could get the effect de-

sired by injecting the medicine somewhere else. I must disagree with him. You cannot get these effects by loading the system to the point of toleration with cyanide of mercury or anything else. That has been tried time and again.

THE OCCURRENCE OF MALIGNANCY IN THE GASTROINTESTINAL TRACT.*

BY HERBERT T. BROOKS, M.D.,
Memphis.

The importance of malignant disease of the gastrointestinal tract (exclusive of œsophagus) may be readily realized when we review the mortality from cancer of various organs and parts of the body as compiled by Hoffman from dependable statistics of the registration area of the United States. Dating from the year 1901 to 1910, according to Hoffman, 62.1 per cent of all deaths from cancer in the male resulted from cancer of the gastrointestinal tract. In case of the female 43.5 per cent of all cancer deaths resulted from cancer of the gastrointestinal tract. The per cent is lower in the female than the male, owing to the frequency of malignancy in the female generative organs and in the breast, as 23.1 per cent of all cancer deaths in the female resulted from cancer of the generative organs and 14.4 per cent resulted from cancer of the breast.

The malignant tumors of the gastrointestinal tract, as elsewhere, are the carcinoma and the sarcoma. The great majority are carcinomas. Histologically, four types of carcinomas occur in this region—namely, adenocarcinoma, medullary carcinoma, scirrhus carcinoma, and gelatinous carcinoma.

Adenocarcinoma.—This type originates from the cells of tubular glands of the mucosa, and these cells in their proliferation tend to maintain the structure of the parent cell—that is, to form glands. So in their proliferation and invasion of adjacent tissues the glandular arrangement is more or less maintained. The typical gland is of a certain form and lined by a single layer of columnar or cuboidal cells, with an oval or round nucleus at the base. These cells in adenocarcinoma become more or less polymorphous, and

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

there are present several layers. The histological criteria for cancer, however, are the presence of infiltrating glands in the submucosa, where they do not belong, and lining cells of the glands breaking through the basement membrane and invading the surrounding stroma.

Medullary Carcinoma.—This is a most rapidly growing type, and forms masses which project into the cavity of the stomach or intestines. On account of the poor blood supply, necrosis early takes place in the center, followed by ulceration. Histologically, the cellular elements far outnumber the stroma elements. These cells, in their rapid growth, invade the submucosa in masses.

Scirrhus Carcinoma.—In this type the infiltration may occur as glands or as narrow cords of epithelial cells. In either event much fibrous connective tissue is formed, which contracts and narrows the lumen of the affected organ. This type occurs perhaps more frequently than any of the other types. This shows very little disposition to ulceration.

Gelatinous Carcinoma.—In this type much mucoid or jellylike material is produced. This is explained by the fact that the cancer originates from certain of the columnar cells which have inherent within themselves the function of producing mucus. In this respect they retain the function of the parent cell, which is true of all epithelial tumors.

One often finds a combination such as a scirrhus and a gelatinous carcinoma.

As to the relative frequency of cancers of the stomach and of the remainder portion of the gastrointestinal tract—the small and large intestines—statistics do not exactly agree. According to the report of Hoffman, 50 per cent of all cancer deaths in the male result from gastric cancer, while 12.1 per cent result from cancer of the intestines. In case of the female 32.6 per cent of cancer deaths result from cancer of the stomach, while 10.9 per cent result from cancer of the intestines. According to the report of Hertzler, 20 per cent of all cancers of the body are gastric cancers, while 8 per cent of all cancers of the body are cancers of the intestines.

Cancer of the Stomach.—Either one of the four histological types may occur in the stomach, the least frequent being the gelatinous carcinoma, forming about 2 per cent. The scirrhus carcinoma may occur at the pylorus or it may infiltrate the entire stomach wall from pylorus to cardia,

so that it is impossible to locate the beginning or the limits to the tumor mass. It brings about a thickening of the wall from the effect of infiltration and a contraction from the connecting tissue elements, which greatly narrows the lumen. In the event the pylorus is involved, there results a partial or almost complete stricture, with retention of food within the stomach and secondary dilation. The adenocarcinoma and medullary carcinoma, especially the latter, are rapid in their growth, both into the lumen of the stomach and into the tissues at the base. They early necrose and ulcerate, and soon metastasize.

The most frequent location of gastric carcinomas is the pylorus; and these, according to findings on laparotomies, begin in the lesser curvature and from there infiltrate the entire pylorus. This percentage is given as 80 to 85 per cent. Ten per cent of gastric carcinomas occur in the cardiac end, 4 per cent in the greater curvature, 3 to 5 per cent are the infiltrative type, in which it is impossible to locate the beginning or determine the limits, practically the whole stomach wall being involved. I have notes on fourteen consecutive gastric carcinoma autopsies, which show the following: Nine involved the pylorus—64 per cent; three involved the cardiac end—about 20 per cent; one on the greater curvature; and one was of the infiltrated type.

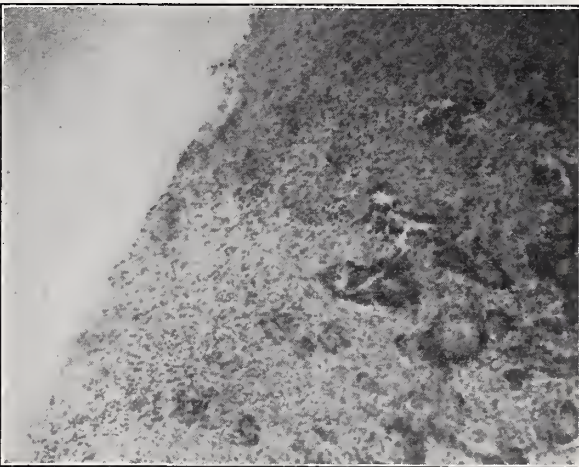
The only etiological factor for gastric cancer of recognized importance is a preëxistent gastric ulcer, but in this respect opinions of investigators very greatly differ. Graham and Wilson place the figures as high as 70 per cent; Wilson and McCarty, 71 per cent. Sippy states 50 per cent; German pathologists, very much less. Cheney, of San Francisco, states that, in his opinion, while every gastric ulcer does not develop into a carcinoma, every one is potentially a gastric cancer.

The variation in the percentage as to the part played by a preëxistent gastric ulcer is due to the fact that some, notably McCarty, base their reports on the findings after laparotomies, and others, notably the German pathologists, on post-mortem findings, as in the latter all signs of the gastric ulcer would be moved. In addition, certain German pathologists, notably Aschoff, state that many of the so-called "gastric ulcers" believed to have undergone a carcinomatous change are carcinomas which have undergone ulceration. In my opinion, the occurrence of gastric cancers

in the cardiac and greater curvature, where ulcers rarely occur, is a point against a gastric ulcer as a cause. In addition, the rather frequent occurrence of duodenal ulcers, with practically never a duodenal carcinoma, is also a point against ulcer as an etiological factor.

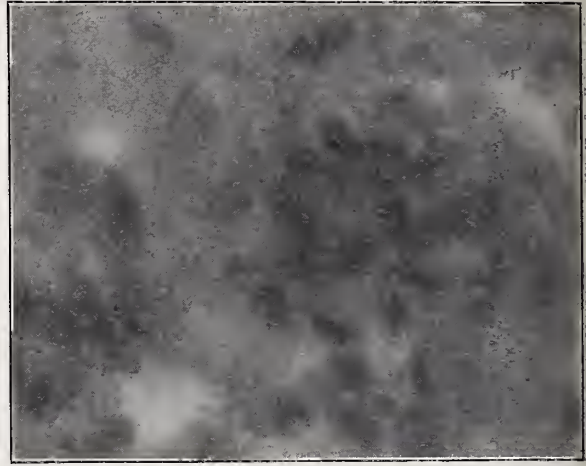
Carcinoma of the Intestines.—As has been previously mentioned, according to Hoffman, 12.1 per cent of all cancer deaths in the male result from cancer of the intestines. In case of females it is 10.9 per cent. According to Hertzler, 8 per cent of all body cancers are cancers of the intestines. Cancers of the intestines are almost altogether, if not altogether, confined to the large intestines. In 1,200 to 1,500 autopsies that I have observed I have never once seen a carcinoma of

Either of the four histological types of carcinoma may occur. The two most frequent are the adenocarcinoma and scirrhous carcinoma, or a combination of these two. The gelatinous carci-



Floor of gastric ulcer. Shows atypical glands in submucosa. Ulcer has undergone malignant change.
Diagnosis: Adenocarcinoma on base of ulcer.

the small intestines. Primary cancers of common bile duct may extend to the duodenum, and appear here as if primary. The following are the locations of intestinal carcinomas: Cæcum, sigmoid flexure, rectum, hepatic flexure, splenic flexure, appendix. Of the 8 per cent of the carcinomas of the intestines, according to Hertzler, 4 per cent occur in the sigmoid flexure or upper rectum. The location next in frequency is the cæcum, and rarely the hepatic and splenic flexures. Mayo, in 1909, reported 61 cases of carcinoma of the large intestines. Of this number, 30 occurred in sigmoid flexure, 24 occurred in cæcum, and 7 occurred in the hepatic and splenic flexures. I have seen in autopsy five cancers of the large intestines—two in the sigmoid, one in the cæcum, one in the rectum, and one in the hepatic flexure.



Masses of epithelial cells present in submucosa of stomach. Hyperplasia of connective tissue.
Diagnosis: Scirrhous carcinoma of stomach.

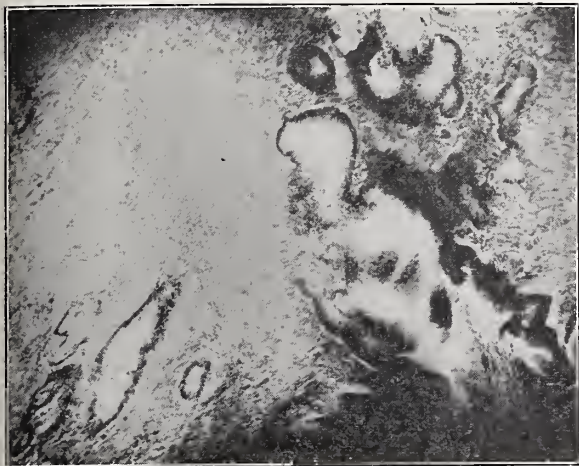
noma rarely occurs. If the cancer is of the scirrhous type, it tends to infiltrate the intestines in a circular manner; and, as a result of the contraction of the connective tissue, a constriction of the lumen takes place, which may go to almost a complete obstruction. If the carcinoma is of the actively growing type, they grow out into the lumen of the intestines as fungoid masses. Soon-



Shows under high magnification a nest of epithelial cells in submucosa of stomach. These cells appear in the form of glands.
Diagnosis: Adenocarcinoma of stomach.

er or later, necrosis, with ulceration, will take place. As a result of the partial closure of the lumen either from constriction by contraction of the connective tissue or by the masses growing

out into the lumen, there will result hypertrophy of the musculature, with dilation, the hypertrophy sometimes being of high degree. Therefore symptoms of chronic obstruction and melæna are

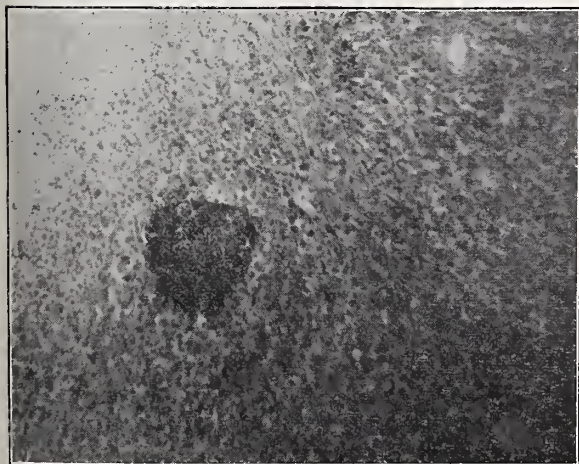


Shows glands of mucosa of colon infiltrating submucosa and muscularis.

Diagnosis: Adenocarcinoma of colon.

the two principal points in the diagnosis of intestinal carcinoma. The latter always speaks for ulceration.

Carcinoma of the Appendix.—Modern writers have reported a few cases of undoubted cancer of the appendix. They are usually small, and are discovered accidentally in the routine of patho-



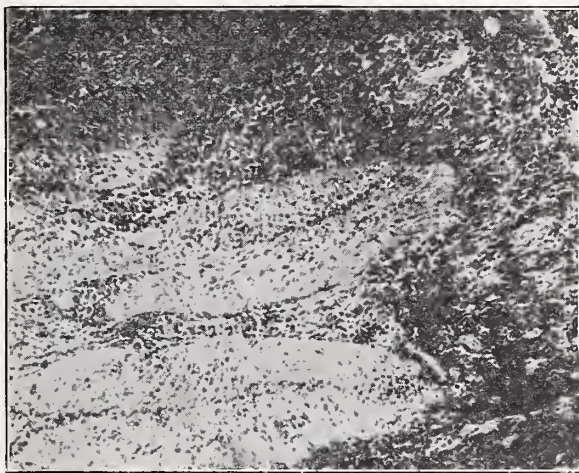
Shows stomach wall everywhere infiltrated with lymphoid cells. The collection of compact cells in a small area of this specimen is a normal lymph nodule; the remaining cells are lymphosarcoma cells.

Diagnosis: Lymphosarcoma of stomach.

logical examination of appendices. Their growth is slow, and never get very large, not often larger than a pecan nut. In the Mayo clinic, from 1906 to 1909, 1-5 of 1 per cent of all his cases diag-

nosed as appendicitis proved on pathological examination to be appendix carcinoma.

Sarcoma of the Gastrointestinal Tract.—This tumor occurs with much less frequency than the carcinoma. The type is most usually the lymphosarcoma, which has its origin from the lymphoid cells of the lymphatic nodules in the stroma of the stomach and intestines. The tumor cells infiltrate in every direction, with a thickening, and oftentimes a substitution, for a part of one of the coats. In contrast to a carcinoma, a sarcoma does not, as a rule, tend to diminish the lumen of the affected portion of the intestines; but, on the other hand, there often occurs a dilatation. Very early the regional lymph nodes become involved by metastasis and enlarge, and, by pressure on



Specimen shows submucosa and muscularis of colon infiltrated with lymphoid cells.

Diagnosis: Lymphosarcoma of colon.

the intestines, result in narrowing of the lumen, with symptoms of partial obstruction.

Lympho-sarcomas occur in the stomach, in the small intestines, and in the large intestines, perhaps with more frequency in the small intestines. I have had four autopsies on cases showing lympho-sarcoma of the gastrointestinal tract. Two were located in the small intestines, one in the large intestines, and one in the stomach.

Lympho-sarcoma in the stomach seems to occur with greatest frequency near the pylorus. Sometimes the entire wall may be infiltrated.

In case of sarcoma of the small intestines, early metastasis in the mesenteric lymph nodes occur.

The primary tumor mass, together with the secondary lymphatic involvement, often results in relatively large intra-abdominal tumor growths.

If this is present and there are no associated signs of intestinal stenosis, one should think of lympho-sarcoma, as in carcinoma there is most usually associated with it signs of partial obstruction.

Sarcoma of the rectum occurs infrequently.

DISCUSSION ON THE PAPER OF DR. BROOKS.

DR. J. F. GALLAGHER, Nashville: Notwithstanding the advances that have been made in medicine, there are two things which stand out quite prominently—first, the lack of progress we have made in our attack on the degenerative diseases, and, second, our inability to cope with the cancer problem.

Cancer should receive a great amount of attention from every scientific man, because it is decidedly on the increase. Whatever may be the cause of cancer, we cannot get away from the causal relation between trauma and the occurrence of cancer—and I say “cancer” in the older and more popular sense, including both types of malignant growth, sarcoma and carcinoma. Following that line of causal relationship between trauma and cancer in the alimentary canal, Dr. Brooks has shown us some interesting things in his percentage table. I see in this causal relationship the rôle of trauma in the occurrence of cancer. We find by his percentage table the occurrence of the disease in the intestinal tract, where there is a great amount of trauma.

We not uncommonly see cancer in abundance in the pelvic organs; and of these, the most frequent site is the cervix uteri, which is severely traumatized incident to the process of parturition. Cancer of the cervix uteri is common; cancer of the fundus of the uterus is not common. It is also true of the urinary bladder, the gall bladder, and stomach, that cancer is relatively rare at the fundus. And, coming down the alimentary canal, we see its occurrence at the gastric pylorus, the cæcum, the hepatic flexure of the colon (the order of incidence being the hepatic flexure, cæcum, and sigmoid in the large gut). The occurrence of cancer at these sites must be regarded more than coincidental. As Dr. Brooks has pointed out, we do not find a malignant growth in the small intestines.

What concerns us practically is: What chance have we of curing this disease when it occurs in these locations? We know that a fairly large per cent—say, about 20 per cent—of cancer does not metastasize—that is to say, patients having had cancer that has terminated fatally, at autopsy we do not find that metastasis has occurred; so the conclusion to be drawn is that in a considerable percentage of cases the radical removal of the disease will effect a cure. So if the surgeon is the first and last to see the case, he can rightly say he has a cure for cancer. If we keep in mind that a certain percentage do not metastasize, and knowing that in certain regions the disease metastasizes more rapidly than in other regions, we can say what are the relative proportions of cures or the prospect of cures.

It is well known that cancer of the sigmoid offers a favorable prognosis because of the late metastasis, provided the patient is a good surgical risk. Unfortunately, cases of cancer of the sigmoid come to us very late. They are usually in old people, and they are by reason of the age of the patient not easy cases to handle; and, added to the age, we often see them first with obstructive symptoms. The question, then, resolves itself into early recognition and radical removal. I think we should bear in mind more the occurrence of malignant disease in the alimentary tract. Of course we are always on the alert for the occurrence of malignant disease in the stomach, but I do not think we pay sufficient attention to its occurrence in other regions of the digestive canal. And the fact stands out here, as in other regions of the body, of the value of early recognition and radical removal of the disease.

GONORRHEA IN WOMAN.

BY JOHN E. HALL, M.D.,
Nashville.

All authorities are agreed that gonorrhea in woman is a more formidable condition than it is in man, for various reasons. In the first place, she is, as a rule, ignorant of the disease and pays slight attention to the symptoms, which are usually mild at the beginning; and as all women at times have leucorrhea to a greater or less extent, she regards the increase in the amount of the discharge, should there be such an increase, as a trivial matter. Consequently she does not seek medical attention until the inflammatory process has spread upward and the pelvic organs have become hopelessly involved. Should she, on the other hand, realize that all is not as it should be with her, and seek medical aid, she is usually told that she has leucorrhea, and that it is of minor importance. A cursory examination of the external genitals, followed by the introduction of a speculum into the vagina, and a glance at the cervix, is about the extent of the usual examination accorded her. Perhaps a few questions are asked as to her menses—duration, quantity of, pain associated with, etc.—the diagnosis of her trouble being made without the aid of the microscope, regardless of the fact that no one is able to make a diagnosis of gonococcal involvement in woman unless the secretions are thoroughly and carefully examined under the microscope. It is so much easier to tell her that

she has "leucorrhea," which term is used, like "eczema," to cover a multitude of sins, or, in other words, to hide our ignorance as to the real cause of her trouble. We do not see fit to explain to her that leucorrhea is a symptom and not a disease. No physician is justified in telling a woman that she has leucorrhea unless he *knows the cause* of the so-called "leucorrhea." We are too often satisfied to guess as to the origin of her trouble, rather than to make a careful examination and ascertain the true condition. If she persists in wanting to know what causes the leucorrhea, we, perhaps, tell her that it is due to an uterine displacement, or that she has a catarrhal discharge from the womb. Pain in the urethra or frequency of urination is lightly explained as being due to cystitis, highly acid urine, or an antelexion or version of the uterus, causing undue pressure upon the bladder, or some other equally vague and indefinite cause. We then go ahead and prescribe some kind of a douche, and assure her that she will soon be all right, when, as a matter of fact, by our negligence, should it be gonorrhea, we are subjecting her to a condition of semi-invalidism for life in a large percentage of cases. The indifference of the profession toward gonorrhea in woman can only be explained by the lack of appreciation as to its significance as a cause of pelvic inflammation.

A woman having gonorrhea is placed at another disadvantage than is man, in that menstruation prevents treatment during her menstrual period, and that it also aggravates the disease. The complications arising from gonorrheal involvement in woman are much more difficult to cure than are the complications arising in man. Therefore in no condition is an early diagnosis more desirable than in gonorrhea in woman. The gonococcus is the greatest cause of chronic invalidism and also of sterility in woman; yet we do not take the time or trouble to give her a real thorough examination when she does come to us complaining of her leucorrhea. Our laxity in examining woman is due to the fact that the symptoms in her gonorrhea are never as severe as they are in man; and, therefore, we frequently overlook the possibility of her trouble being due to this condition. The excruciating pain on urination, usually present in an acute gonorrhea in man, is, as a rule, lacking in woman, although she may have a sensation of burning on

urination and painful swelling of the labia, producing more or less discomfort.

There is another reason why the diagnosis of gonorrhea is not made as frequently as it should be in woman, and that is, that unless she is a prostitute or a woman of known lax morals, we are inclined to regard her, like Cæsar's wife, "as above suspicion." It is in these cases among married women that we are especially prone to make our diagnosis of "leucorrhea," overlooking the fact that the vast majority of husbands have had gonorrhea and that it is a well-established fact that most of them are still infectious.

As to the prevalence of gonorrhea in woman, Noeggerath, in 1872, stated that 80 per cent of all men had gonorrhea, that gonorrhea was an incurable condition, and concluded that all men who had had gonorrhea gave it to their wives. Neisser examined 527 women who showed no visible evidence of the disease, and found gonococci present in 126. There is no accurate method of compiling statistics, for obvious reasons; but suffice it to say that the percentage of affected women is enormous, is steadily increasing, and will continue to do so until the profession wakes up to the gravity of the situation and realizes that gonorrhea is not of minor importance, but that it is really a grave condition, demanding a correct early diagnosis, followed by intelligent treatment. Until this happens, gonorrhea will continue being the grave menace to society that it is to-day.

According to Finger, the parts primarily involved, in order of their frequency, are the urethra, cervix uteri, and Bartholin's glands. Watson, of Glasgow, claims that the cervix is the original site of the disease, and he gives, in order of frequency, the cervix, urethra, and Bartholin's glands. He says that the cervix is inoculated in nearly all infections of adults, and that in the few cases in which the urethra is the primary seat of infection the cervix is soon implicated and becomes the main source of danger. From the cervix uteri the gonorrheal infection may extend to the uterus, Fallopian tubes, ovaries, and peritoneum. According to Baermann, the cervical canal is the only part infected in 46 per cent of female gonorrhea. A recently infected cervix, on examination, presents a picture of an acute catarrhal inflammation, the mucous membrane being swollen and dull red, and pus is seen exuding from the external os. The cervix

bleeds easily, and the manipulation necessary for examination causes pain.

The gonococci rapidly spread to the subepithelial tissues, from which it is practically impossible to dislodge them. The gonococci develop in the cervical canal and invade the uterus secondarily. The gonorrheal process may be limited to an endocervicitis, or it may extend to the cavity of the uterus, giving rise to an acute endometritis, or to an acute metritis, in which the muscular tissue of the uterus is invaded by way of lymphatics. According to Menge, the cervical mucus acts as a barrier to all microbes, with the exception of gonococci alone. The acute cervicitis subsides into chronic inflammation, and this is the most common seat of chronic gonorrhea in woman. This is the explanation of the frequent cases in which men contract gonorrhea from a woman who has no signs of gonorrheal involvement of the external genitals. This infection usually takes place following coitus, immediately after menstruation, as the secretions are more infectious at this time than at any other time. In chronic cervicitis the cervix is deeply eroded, due to the continuous purulent discharge. The discharge varies; it may be thin and watery or thick and purulent, yellowish, gray, or green in color. The uterus may or may not be enlarged.

VAGINITIS.—The adult vagina is peculiarly resistive to the gonococcus, due to its being covered by pavement epithelium and to its absence of glands. It secretes a serous fluid containing some leucocytes and epithelial débris. This secretion is acid in reaction, due to the lactic acid properties of the bacillus of Doederlein, which normally inhabit the adult vagina. Zweifel says that, in addition to the free lactic acid in the vagina, there is a proportion in combination, probably, with sodium as a base. Antiseptics decrease the acidity by destroying or inhibiting the vaginal bacilli. Doederlein and Zweifel also point out that, in douching with tap water, the lactic acid becomes fixed by combining with the bases in the water, while, following the use of distilled water as a douche, the acidity is increased. Watson says that during the menstruation and during the puerperium this acidity is lessened, if not abolished, and that infection of the uterine cavity is more prone to occur at these periods. Any condition of health which markedly increases the uterine and vaginal secretions, and thus produces dilution of the acid content of the

vagina, is also a factor favorable to the spread of the infective process. A slow stream is conducive to the acid formation, and vice versa. McDonagh, of London, says that the epithelial cells of the vagina have destructive properties toward the gonococcus, giving as his reason that the vaginal mucous membrane of adults is rarely affected, while that of young girls is especially prone to be affected by the gonococcus; also, because nasal and buccal mucous membranes are very seldom, if ever, involved, showing that the epithelial cells in different localities evidently have different antigonococcal properties. The reason why vaginitis is common in young girls is because the epithelial surfaces are tender and nonresistive. The adult vagina contains organisms that are not met with in young maidens. The bacillus of Doederlein does not make its appearance in the vagina until the approach of puberty. Finally, the mucous membrane of the adult vagina secretes a mucinous substance in which the gonococcus cannot flourish, while the vaginal mucous membrane of young girls has no secretion. Women who have had their uteri and ovaries removed are exceptions to the rule as to vaginitis in adults. The removal causes a shrinkage of the vaginal mucous membrane and reduces the number of layers of epithelial cells. This lessens the secretion, and in this way allows the gonococci to penetrate into the connective tissue beneath.

A *gonorrheal cystitis* is an exceedingly rare condition, and, unless the resistive power of the bladder epithelium is reduced by injury or disease, it is able to overcome the gonococcal invasion.

BARTHOINITIS is a very common complication. The inflammation may be limited to the duct, or it may affect the gland itself and also the periglandular tissue. The affection may be either unilateral or bilateral. Acute Bartholinitis is manifested by acute swelling of the lower part of the labium majus. Pus can be expressed from the duct of the gland, on the inner surface of the labium. Fistulous openings may be formed, unless the pus is evacuated early. When the duct becomes occluded and an abscess forms, the lining membrane of the gland is destroyed; therefore when it is opened and the pus evacuated, after healing, a recurrence is very unlikely to take place. The acute inflammation, without pus formation, subsides into a chronic inflamma-

tory condition; and once chronically inflamed, frequently recurring retention cysts are likely to arise, or suppuration due to secondary infections may arise. Chronic Bartholinitis is one of the common forms of latent gonorrhea by which women who are apparently healthy cause gonorrheal infection in man. A chronic Bartholinitis presents no symptoms, except when retention cysts form, and a woman may be wholly ignorant of her infectious condition.

URETHRITIS.—Gonorrheal urethritis in woman may be acute or chronic, but it seldom gives rise to such acute symptoms as in man. It is usually associated with a vulvitis. In the acute condition the meatus is red and swollen, and a purulent discharge containing gonococci can be expressed from the urethra. In chronic urethritis the discharge is mucopurulent and the urine contains filaments. A paraurethritis may be present. The openings of the paraurethral canals are just external to the urethral orifice. These canals are congenital, and are probably the remains of Skene's tubules. They are easily destroyed by electrolysis.

ENDOMETRITIS.—Bumm was responsible for the teaching that gonorrheal involvement was usually limited to the cervix, and that the inside of the uterine body was rarely involved. He claimed that the internal os formed a barrier beyond which the inflammation rarely extended, and that when upward extension did occur, it was the tubes that were affected rather than the uterine mucosa. He claimed that the uterine mucosa was not a favorable ground for the propagation of gonococci, but that it was capable of passing the infection on to the Fallopian tubes, developing a typical salpingitis, followed in some cases by peritonitis. Bumm says that when the corporal mucosa is involved, the gonococci penetrate much deeper than they do in the cervical mucosa, and that this is a rare condition; but when it does occur, it is always accompanied by fever. Wertheim claims that Bumm had no reason, from a histological point of view, to support his teachings, claiming that the endometrium is a most favorable field for gonococcal propagation, and also that there is no closed sphincter to separate the cervix from the cavity of the uterus. Wertheim says that he has demonstrated gonococci in curetted portions of the endometrium in both acute and chronic cases. He has also performed hysterectomy in eight cases in which the

gonococci have been found in the uterine discharge, and that, in all these uteri, the gonococcus was demonstrated between the superficial epithelia and in the subepithelial tissue of the uterine mucosa. No gonococci were found in the deep layers of the reticular connective tissue. The interglandular spaces were filled with pus and round cells. Wertheim also claims that there are no symptoms by which one can distinguish between endocervicitis and endometritis, and further says that in the vast majority of cases of endocervicitis it is accompanied by an endometritis. The factors favoring the spread of the infection to the endometrium are menstruation, coitus, the puerperium, and the instrumental interference. In acute endometritis, pressure over the uterus causes severe pain. This also prevents sexual connection. The acute stage lasts only a few days, subsiding into the chronic. The chief symptoms complained of in the chronic stage are dysmenorrhea, metrorrhagia, and menorrhagia. These symptoms are liable to exist after the gonococci are no longer demonstrable, due ordinarily to a secondary infection, which keeps up the chronic inflammatory condition. Gonorrheal endometritis is a common cause of sterility, but pregnancy may occur in spite of it. It is also a cause of abortion. The occurrence of pregnancy causes an exacerbation of latent gonorrhea, causing fresh activity and more extensive involvement. The uterus remains enlarged, with a dilated cervix, and is liable to prolonged metrorrhagia. The lochial discharge contains gonococci, and there is frequently fever. Puerperal gonorrheal endometritis explains the cases of "one-child sterility," this condition resulting from cicatricial stenosis of the internal os, due to chronic endometritis, by occlusion of the Fallopian tubes from pelvic inflammation or by the extension of the inflammation to both ovaries.

SALPINGITIS.—Salpingitis is due to direct extension of the inflammation from the endometrium. It may be either unilateral or bilateral; but, as a rule, both tubes are involved. Guiteras claims that we may have a pyosalpinx on one side and a catarrhal salpingitis on the opposite side. In acute purulent salpingitis the pus escapes from both ends of the tube. Where the pus escapes into the pelvis, there is a plastic peritonitis produced, with rapid formation of adhesions, closing the internal os and preventing further leakage from that end. The uterine end of

the tube also becomes occluded, according to Watson, and the tube is converted into a pus sac. The symptoms gradually subside after this happens; and after two or three months the contents of the tube become sterile, and gradual absorption takes place, with continual improvement in the patient's health. This being the rule in gonococcal salpingitis, palliative treatment in contradistinction to operative treatment is obviously indicated. Gonococcal involvement of the tubes, ovaries, and peritoneal cavity almost invariably results in chronic invalidism. There are no regular symptoms. The patient complains of vague pains, always feels ill, is anæmic, and is usually constipated. It is usually at this time that she first consults a physician; and while the physician may know that the whole trouble is a result of gonorrheal infection, it is rather hard to convince her that this is so, as the probabilities are that the infection is of long standing and she may have never known that she had gonorrhea.

The ovary becomes involved by continuity of tissue, and is usually bound to the tube and surrounding tissue. The massive exudate surrounding the organ is derived from the outflow of pus from the distal end of the tube. A corpus luteum abscess, due to gonococcal involvement, is not frequently encountered.

TREATMENT.—I would like to call attention to a few points in the treatment of cervicitis and endometritis, as advocated by some of the latest authorities. McDonagh says that cauterization of the cervix by strong solutions of iodine or nitrate of silver does no good. He says also that under no condition should the cervix ever be dilated in a case of cervicitis or endometritis for the purpose of painting the inner surface of the cervical canal or the interior of the uterus with strong antiseptics, for it does no good, as it only kills the gonococci it comes in direct contact with and does not penetrate deeply enough into the connective and muscular tissue to affect the organisms; that dilation causes small superficial injuries, and, if the gonococci have not already entered the subepithelial tissues, they are certain to do so now; that instrumentation of the cervix or uterus aggravates every case of gonorrhea of these organs, whether acute or chronic. He says he has never seen a case of endometritis benefited by curetting. He says also that they can only be reached by the blood stream, and

that, as we have no drug in gonorrhea analogous to salvarsan in syphilis, we are forced to admit that chronic gonorrhea in woman is beyond our assistance at present.

McDonagh advocates the use of vaccines, as he says they increase the patient's natural protective powers; that they, no doubt, check the spread of the disease; and that in pelvic gonorrhea vaccines may be the only treatment that exerts any influence on the disease; but he qualifies his statements by saying that the brilliant results sometimes obtained by some observers are far from being universal. Marshall, of London, also says that the results obtained with vaccines have been far from favorable, and that, while this form of treatment is rational, the results in gonorrhea are uncertain, and that this form of treatment cannot yet be said to be established on a scientific basis. Watson says that in chronic endometritis it is impossible to destroy or remove the endometrium and its infected glands by curettement, and that, if it could be done, it would result in the obliteration of the uterine canal. He says that it is only subjecting the patient to unnecessary pain and risk, and that it seldom, if ever, does any good, and may do harm by setting up an acute salpingitis; that in endometritis the gonococci quickly penetrate the glands and tissues to a depth beyond reach of the curette and antiseptics, and that the indiscriminate use of strong caustic solutions and the curettage operations which are undertaken is one of the mistakes of gynæcological practice of to-day. As to the vaccine treatment, he says that his experience has been considerable, and that it has taught him that vaccine therapy, as practiced at present, is as likely to do harm as good.

In concluding, I want to repeat that there is no disease in which the early diagnosis is so desirable as in gonorrhea in woman; for all authorities concede that after involvement of the pelvic organs it is practically a hopeless condition as far as effecting a cure is concerned. Therefore it behooves us, as physicians, to make a thorough microscopical examination of the secretions in every case where a woman comes to us complaining of leucorrhea; for by overlooking her condition, should it be due to gonorrheal affection, we may be causing her to undergo lifelong suffering.

The breast-fed baby has the best chance.

HYSTERIA OF ALLEGED TRAUMATIC TYPE.*

BY S. R. MILLER, M.D., F.A.C.S.,
Knoxville.

Hysteria has such a variety of symptoms and so little pathologic changes that it is difficult to give a definition that is accurate and comprehensive. The morbid state of the nervous system may manifest itself in almost every variety of symptoms possible from functional disturbance of the cerebral and spinal centers.

Delicate females—usually young or under middle age—constitute the majority of those affected; but no age, sex, or civilized race is exempt. Robust men with history of previous good health are not infrequently victims of the disease. They may have the typical form of hysteria, but more frequently have an atypical type.

Dieulafoy divides all cases into two principal forms—convulsive and nonconvulsive. The older writers probably recognized only the former types, and, because girls and young women in active sexual life were the usual victims, it was believed a disease of the female sexual organs. In this enlightened age the layman, and perchance the more ignorant medical man also, ascribes it to that cause. Such individuals usually have the convulsive type, and in every country constitute a large per cent of all cases. On account of these facts the nonconvulsive form of the disease is often not recognized as such, but it is attributed to some unknown disease or to some trivial and possibly remotely connected trauma.

Babinski says: "Hysteria is a psychical condition rendering the patient capable of autosuggestion. It manifests itself principally by primary troubles and to a minor degree by secondary symptoms. The characteristic feature of these primary troubles is the possibility of reproducing them by suggestion in certain subjects and of causing their disappearance by the sole influence of persuasion. The secondary troubles are characterized by the fact that they are strictly subordinate to the primary troubles."

Many modern and eminent authorities agree that hysterical symptoms are the result^of suggestion or autosuggestion, and, therefore, pro-

duced by the will. It is with such facts in mind that I wish to direct your attention to a large class of cases of this disease which are ascribed to trauma. The mother of a newborn babe bearing a birthmark can usually connect such with some thought, fright, sight, or influence during her period of gestation. Such connection often requires a vivid and biased imagination. Likewise almost every hysterical individual with a paralysis or other nonconvulsive hysterical symptom can recall some accident or injury of recent or remote occurrence to which the symptoms may be accredited.

Athletics, though engaged in by those of especially susceptible age and often attended with severe and repeated traumatism, is rarely productive of hysteria. Those in some of the especially hazardous occupations are seldom victims. Likewise individuals injured at their own work and with only their own financial responsibility are seldom hysterical. The absence of a responsible person against whom indignation may be felt or financial responsibility may be charged is a potent preventive factor. It seems agreed that sudden fright, extreme fear, continued worry, and great anxiety are causative factors of hysteria of all types. Autosuggestion of conscious or unconscious nature is usually an important added factor. Even with a combination of these there must be a receptive condition of the nervous system of hereditary or acquired type.

Modern life has gradually become more and more strenuous. The American professional and business men often work too hard and live too fast. There is great haste to acquire wealth, position, and preferment. The salesman, the mechanic, or the laborer and his family live to the very limit of his income. Sickness or other unusual expense renders him unable to meet his financial obligations. He or his family are unwilling, or perchance unable, to reduce normal expenses. He must, therefore, remain with a deficit or in some unknown manner increase his income. The housewife, with her never-ending cares, works and worries to care for her household and pay her monthly bills with limited income. Possibly her family is increasing in numbers and size and her horizon broadens and surroundings improve, and thereby add new expenses to be paid from the same wages. The society woman strives to excel her neighbor, and worries because she cannot surpass those who

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

have more money and superior ability as social leaders or because she cannot dominate her circle or some pet club or church or social organization.

Such necessities, surroundings, and influences prepare a fertile soil for autosuggestion; and "when the mine is loaded and the match is ready, nothing is easier." The necessity is keenly felt from week to week or year to year, and a strong desire for a remedy is deeply planted in the mind. The golden opportunity arrives suddenly and often unexpectedly. There is no conscious connivance; but a suggestion from a relative or friend, or perchance an autosuggestion planted in the well-prepared conscious or subconscious mind, takes root immediately. The housewife or working woman ceases to worry, and receives much consideration from her family and friends; the day laborer, the mechanic, or the salesman rests from his labors, and sees visions of great financial aid, wages, and insurance running concurrently or advance in position and salary; the professional or business man sees a splendid opportunity to get rich immediately, or perchance to gain notoriety or position that will aid him in whatever he most desires.

Sudden convulsive seizure of an emotional individual, following immediately or in a short time after the alleged traumatism, may occur and is easily recognized, but is not a frequent form in those of previous good health, except they have had previous attacks. The healthy, robust individual usually has the nonconvulsive type that may follow immediately, but usually has its onset after a few hours or days.

Instead of the typical convulsive seizure, there may be paraplegia, anæsthesia, paresthesia, hyperæsthesia, tremor, ataxia, deafness, blindness, mutism, visceral symptoms, and almost any symptom that can be produced by the cerebral or spinal centers.

If a corporation or wealthy firm or individual is involved, the autosuggestion seems more potent. The symptoms often simulate injury to the nerve centers. If they do not, the examination of the attending physician often leads them in that direction. The suggestions of the relatives and friends sympathetically add anything omitted by the physician. If the physician recognizes the true condition of the patient and uses his best efforts to direct his patient to health and normal life, he has no coöperation from the patient or

anxious friends, and at once becomes very unpopular; and, soon or late, another physician or physicians are called to make a diagnosis to conform to the patient's mental state. To the patient and anxious friends the diagnosis seems more important than the treatment.

Likewise the lawyer often takes a prominent part in the case, and sometimes seems more important and influential than the doctor. He does not see and recognize the great injury done such patients by allowing hysterical stigmata to gain permanent hold on the patient. The more severe the symptoms and the longer they dominate the patient's nervous symptoms, the more difficult of eradication. This class of cases may be associated with neurasthenia and other psychoses, and, if not associated, may be difficult to differentiate. By the lawyers and unbiased friends they are often believed to be malingerers. Such patients usually have no conscious connivance and should not be charged with willful wrongdoing. It is clear, however, that the physician and well-wishing friends should use every effort to check the unconscious tendency of the patient and restore him to normal. It is difficult to know just how far the hysterical mantle should spread in the individual case. The courts have intended to aid these unfortunate individuals; but the influence of impending litigation certainly retards recovery, and, if greatly delayed, may prevent ultimate and complete recovery. If prompt determination of liability or nonliability could be determined, and if liability exists, prompt settlement made, it would materially hasten recovery and render it more probably complete and permanent.

DISCUSSION ON THE PAPER OF DR. MILLER.

DR. S. S. CROCKETT, Nashville: Dr. Miller has presented a very interesting problem that has confronted every gentleman I see before me to-day. The subject is hysteria from alleged traumatism. If a man is riding on a railroad or a street car and an accident happens and he breaks his leg or fractures his spine or crushes his skull, we see tangible evidence of his injury; but if he is taken out with not a scratch on him, not a bone broken, not a mark on him, from that time on until he gets a good verdict the chances are he is an invalid. But he may be just as much injured as the man who broke his leg, and the question arises: Is he not just as much hurt as the man who has broken his leg? As the doctor has stated, psychological processes

control a great many of these people. It is unfortunate to apply the term "hysteria." Perhaps it is better to call it a "functional nervous disturbance," because it is not always hysterical. Often it is a complex picture. But the point I want to make is that these people are injured; they are just as much injured as if their legs were broken or their skulls crushed. Corporations recognize that fact, and these patients will never get well until they get a verdict, which is the best therapeutic measure ever applied to them. It is not pretense. They are ill, and their illness is from the shock of the accident, and not from the breaking of a bone.

I saw a young man from Kentucky who was brought to Nashville to see me. He was a large, stout fellow. He was a graduate of Princeton University. His occupation was that of mail clerk. He was taken out of a wreck without a bruise or scratch on him. He said: "There is nothing the matter with me." That night he was found unconscious. The next morning he woke up, wanted to go to work, but could not get to the office. The next day he limped around, and said he was stiff in his hips. He became violently insane, and was taken to the asylum at Hopkinsville. He was kept there, I think, five months. It was thought that at one time he was dying, but he ultimately got better. As I have said, he was brought to me in Nashville. Some of the gentlemen present saw him. I stripped that man, and found that he did not have a mark on him, and he alleged he was not hurt. After he was stripped, I stuck pins in his ankle, his leg, his thigh, on one side of his penis, his thumb, and one part of his nose, and he was as analgesic as a man could be. There was absolutely no sensation on one side. He said: "If there is anything in the world that will get me well, I will be glad to do it." He did not bring a lawsuit for nearly a year after he was hurt, after he had been in the asylum for three months; but a lawsuit was pending then. I sent him to an uncle to work on his farm. He plowed and did everything that a farmer would do. I had him before the class one day when he was suffering from ill-defined hallucinations and when he was analgesic. He said: "Take me out of here. Men are talking to me. Get me out of here quick." He looked well and strong, but this little excitement caused him to exclaim that he wanted to be taken away. He went to his friends in Southern Kentucky and worked on the farm; he could not sleep, but I told him I wanted him to do the work of a man. He wrote me at the end of the first week, saying: "I have been plowing every day like a 'nigger.'" Plowing was a splendid hypnotic for him. He worked like a slave for a month. I wrote a letter to his lawyer and mailed a copy of it to the attorney for the railroad, in which I described the situation of this young man. The lawyers got together and settled the suit. He came back and said that, now the litigation was off his mind, he believed he was going to get well. They gave him four thousand or five thousand dollars. He went down to Florida and bought an orange farm, and a year afterwards he came back to Nashville to visit his family, and a finer specimen of manhood I never saw; but he was still analgesic.

I have mentioned this case to show that these people

are hurt. They are injured just as much as if they had a broken leg or a fractured skull. These psychoneuroses develop in people who have no intention of bringing a damage suit. There is a great deal of malinger in connection with these cases, but we make a mistake if we think they are not injured. They are injured.

DR. E. T. NEWELL, Chattanooga: This is a very important subject that Dr. Miller has brought before the association. The main point about these legal questions has not been brought up so far, and that is, a settlement of the case usually brings about a cure. That is one of the principal points you want to bring out on the witness stand, and the condition is seldom permanent. If a man continues to have depression of the skull, he may have epilepsy fifteen years from now or not, as has been pointed out by Dr. Murphy. In these cases of traumatic neuroses a settlement usually brings about a cure, and the injured man is entitled to compensation for the time until his case is settled. The main point to be brought out in connection with these cases is that a greenback plaster will cure ninety per cent of them. The injury received is not permanent, and the jury should base their verdict upon the injury that the man received or from the time of the injury to the settlement of the case, and not base it on a permanent injury, as where there is a fracture of the skull or something of that character.

DR. C. A. ROBERTSON, Ridgetop: I am afraid that if such expert testimony should be submitted to a jury it would prejudice the case of the client and he would not get the *greenback plaster applied*. It might be well to go slow in emphasizing such an efficient therapeutic measure in the relief of these cases, because it would go a long way in preventing a verdict being rendered in favor of the client, and he, perhaps, would never get well.

DR. L. W. HASKELL, Memphis: Dr. McGehee will recall Judge Pitman, of Memphis, who has made quite a study of these cases and has followed very thoroughly a few of the cases that came before him. As I recall, he said there were several such cases that had come before him from time to time, and one of them was a colored woman, who did not recover for several years, even after a very liberal settlement of the case; so that I think that there is a good deal in what Dr. Crockett has said in regard to these cases being injured. They do receive a nervous shock which is comparable to injury.

DR. W. J. MILLER, Johnson City: In speaking of the treatment of these cases, several gentlemen have suggested that the best and surest treatment, if a man is hurt, is to recover a verdict in his favor. I fully agree with them in that regard. The thing for us to do is to honestly help the fellow and help the jury to arrive at a reasonably fair verdict. The next best thing to a greenback plaster or poultice is to end the litigation. The injured man gets well about as quickly when he loses out as when you settle his case.

DR. S. R. MILLER, Knoxville (closing): I have noth-

ing further to say, except to caution our members not to go on the witness stand and claim that the man has an injury to the spine or an injury of the brain when these cases are pure hysterias of the atypical form. That is what brings the medical profession into such disrepute. One doctor goes on the witness stand and testifies that such and such injury has been received, and another man goes on and tries to make out a lot of organic changes that have taken place in the nervous system. I believe that these people are entitled to something, if there is any liability, for throwing the nervous system out of gear; but corporations should not pay for disability throughout life. Some of these cases may have been markedly hysterical before they received an injury, and all that was needed was an injury or a nervous shock to bring out the full symptoms of their condition.

HYGIENE OF THE EYE.*

BY EUGENE ORR, M.D.,
Nashville.

We are all more or less familiar with that time-honored joke of the young doctor, just out of school, who, upon graduation, returns home and takes over his father's practice, allowing his father to take a much-needed rest. The old gentleman returns to find that the son has "killed the goose that laid the golden egg"—or, rather, has cured the patient who had been the means of his education. Now, there might have been some little truth in that in years gone by; but if there ever was such a period, that day has passed forever, and we are now living in an age of preventive medicine. So it is well for us to begin to consider some of the special organs along the lines of preventive medicine; and when we consider the almost vital part played by the eyes in the conduct of human affairs, we must realize that in no branch of medicine should the laws of hygiene be more rigidly enforced than in that of ophthalmology. Carelessness at time of birth, useless exposure of the infant's eyes to bright light, pernicious school influences, and other violations of the laws of hygiene, are the causes of many preventable eye diseases. For convenience these may be divided into two groups—infectious and noninfectious.

The infectious eye diseases are ophthalmia neonatorum, trachoma, and the other less serious infections.

Under the noninfectious group are retinal changes due to exposure to bright light and errors of refraction, with their many consequent evils, the most common of these errors which is preventable being myopia (nearsight), with its accompanying choroidal changes.

In this paper it is not my aim to deal with the infectious conditions, but rather to confine myself to the noninfectious, they being more insidious in their course; consequently it is harder to arouse the interest of the public.

To begin with the babe. The infant's eyes should be protected from intense light. However, a judicious amount of sunlight, if properly shaded and not allowed to fall directly into the infant's eyes, will not only do no harm, but is almost essential. It is to be remembered that the health of the eye is dependent upon the health of the general system.

The baby carriage should be provided with a sunshade lined with a material the color of which will absorb light, such as green, and not with a white parasol, or, as is seen in some instances, none at all. This useless exposure to bright light, besides producing a conjunctivitis and retinal hyperemia, may produce pigment changes at the macula and, corresponding to this, a central positive scotoma, which may become less marked, but does not disappear entirely. Children should be kept out of doors as much as possible, and picture books and small toys which require close vision should be discouraged.

Just a word in regard to kindergartens. They are frequently located in buildings which were never intended for this purpose, being poorly lighted and improperly ventilated; and the children are sometimes obliged to amuse themselves with occupations which require very near vision, such as clipping pictures from magazines, etc. This near work, if kept up for any length of time by a child at this age, is frequently the cause of injured eyes. Myopia and strabismus in particular often result therefrom. Before sending a child to a kindergarten the particular kindergarten chosen should be thoroughly investigated along these lines.

Then comes up the question as to the proper age for a child to enter school. I refer to the regulated school course. Obviously there can be no set rule which can be applied to every case. The physical condition of the child, as well as the condition of the eyes, must be considered. As a

*Read at the meeting of the Middle Tennessee Medical Association, Franklin, November, 1916.

general rule, however, the ocular tissues are well developed at from seven to nine years; and if a child is physically fit otherwise, he may then enter upon a well-regulated school course. Now if the child has a high refractive error, fundus change, etc., or if his physical condition is not up to par, he should not be allowed to attend school until such time as his general health has become good and not until the error of refraction has been corrected. In the meantime he may be given some special course, either at home or at school, strongly advising outdoor exercise.

I believe all children on entering school should have a certificate from a physician as to their general health, and as to their eyes as well, especially in regard to trachoma and errors of refraction. I would not mean to lower our educational standard in the least. I think it should be the highest possible, with the least expenditure of physical well-being.

Much near work has to be done by artificial light; so the subject of lighting has become one of special study, and on it much has been written. In 1911 a committee was appointed by the American Medical Association to compare the effect of different lighting conditions on the eye and to find the factors which cause the loss of efficiency and the discomfort. Some of their conclusions were that proper illumination depends (1) on the evenness of illumination, (2) angle at which light falls on the object viewed, (3) diffuseness of the light, (4) evenness of surface brightness, (5) intensity.

De Schweinitz endeavors to explain the asthenopia (headache, neuralgia, etc.) by the effects of the ultra-violet, infra-red, and visible rays. He thinks ultra-violet mostly responsible, and believes the most important source of trouble arises from a disturbance of the function of the ciliary body, which is long in subsiding, and, while it lasts, appears to be responsible for the ciliary neuralgia and headache which arises when this muscle is contracted in the effort of accommodation.

Sunlight gives by far the best illumination. It should come in direct, and all parts of the room should be evenly and diffusely lighted. The light should enter from the left or rear, and under no circumstances should the light fall in the student's face.

As to artificial light, either electricity, gas, or coal-oil lamps can be made satisfactory, the indi-

rect being best—that is, where the rays are broken before they reach the eye. It is to be remembered that an eye shade is a poor substitute for a lamp shade. It is a well-known fact that pupils on lower floors of school buildings suffer most from defective vision.

Children should be encouraged to study as much as possible while they are at their desks, for in this way daylight, the best light of all, is utilized; and then, too, the lighting facilities of their homes may be the worst imaginable. It is also important that the desk be comfortable and of such size as to conform to the size of the child.

Poor print is a very prolific source of eye trouble; for if the print be poor and indistinct, the book must be held close to the eye in reading, and this demands an extra effort to accommodate. It must be remembered that the eyes move constantly in reading; so if the lines be too long, the external muscles may suffer. The lines should not exceed four inches, with enough space between to avoid confusion. Print which cannot be read distinctly at a distance of twenty inches should not be read continuously.

Reading while riding on cars should be discouraged, as the repeated changes in focus keep up a constant effort of accommodation, and the work of the external muscles trying to keep the organs on the lines is very fatiguing. Reading in the recumbent position is bad, for it is almost impossible to hold the book in a comfortable position without tiring the external muscles of the eye. During convalescence this practice is even worse, for muscles are then usually weak and the resistance of the tissues below normal. Reading while one is drowsy should not be indulged in, as it forces the ciliary muscle to work when it would relax and the external muscles to act when the eye would diverge.

Eye examination of all school children is being taken up by many cities, towns, and even private institutions as a result of the increase in myopia (nearsight). Exhaustive researches have been instigated, and many valuable statistics have resulted. It is well known that the eyes of animals and uneducated races at birth are farsighted, and in our own people statistics of school examinations in the beginning of school life show the relative proportion of myopia (nearsight) to be much less than it is later on in school life. The same is true of any occupation which demands close vision and which is begun in early

life. From this it might be argued that the change in refraction is a normal evolution—that as the child develops intellectually, the eye likewise develops.

Risley has observed, in the schools of Philadelphia, that 60 per cent of eyes with myopic (nearsight) astigmatism present choroidal atrophies and inflammations, and 87 per cent had various forms of choroidal disease, while 70 per cent were asthenopic. The percentage of nearsight, it is seen here, was in direct relation to imperfect school conditions. How do we account for this? As a result of the poor illumination, defective print, etc., it is necessary to bring the object near the eye, the result being an under effort of accommodation and convergence, with congestion of the ocular tissues. The globe is pressed upon by the tense external muscles, the tissues being softened by the repeated congestions; hence elongation occurs backward, being in line of least resistance. The resultant myopia (nearsight) causes the object to be brought still closer to the eyes; so the process continues, the elongation and myopia progressing together.

There are, of course, other factors to be considered in myopia, such as hereditary influences and various deformities of the skull.

About the age of forty-five the lens begins to lose some of its elasticity. This is known as "presbyopia," and is a physiological condition which should be corrected by glasses for near work.

In the declining years of life the organs of the eye, like other organs of the body, become less resistant to diseases, so that the greatest care should be exercised that the eye be not unduly strained by prolonged application to near work. The eyes should be bathed with a boric-acid solution once or twice each day and the glasses kept clean.

In conclusion, I wish to lay stress on a few points. First, that nearsightedness is on the increase in our schools, as is shown by school examinations; second, it is largely preventable, being produced by poor light, bad print, etc.—in fact, anything which causes the object viewed being brought nearer the eye than is normal.

Now as to preventing the preventable eye diseases. This will depend largely upon education and legislation. By this means we have already greatly reduced gonorrheal ophthalmia. Proper lighting systems are being installed in some of

our schools. School inspections are being taken up by both city and private schools; but, unfortunately, no provision has as yet been made for relieving the poorer children of the conditions, aside from infectious diseases, found by these examinations. What we need most now, aside from devising some means whereby the causative factors, such as bad print, poor light, etc., may be removed, is to be able to furnish glasses to those poorer children suffering from errors of refraction.

SURGERY OF THE GALL PASSAGES.

By C. N. COWDEN, M.D.,
Nashville.

We are living in a progressive age in regard to all the sciences, and especially is this true of medicine and surgery. Great strides have been made in the last decade under the magic hand of the present day, and the end is not yet. Book after book has been written, case reports and essays innumerable have appeared dealing with surgical problems; but none have been of greater interest to the profession at large than those that deal with gall-bladder disease—its pathology and surgery.

Appendicitis a few years ago was the all-absorbing topic, but it to-day receives scant attention in literature. It has been placed before us in such an understandable way, even with all of its many phases, that physicians and surgeons alike have grasped the fundamental principles underlying its hitherto hidden surgical pathology, till now we both feel secure and almost satisfied with our knowledge upon the subject. Not only the medical fraternity as a whole is familiar with every phase of this problem, but the laity have been educated up to the point where they have grasped the true meaning of the condition, and many are able to make the diagnosis and demand the correct treatment. Unfortunately, gall-bladder surgery has not reached this state of perfection; and the profession now is in the midst of many struggles in regard to the entire subject of gall-bladder disease. The subject is, perhaps, the liveliest one before the surgical world, and the day is not far distant when we will be able to handle its problems with a like degree of certainty as

we do those of appendicitis. One of the greatest difficulties in the way is that due to the fact that pathologists have for a long time insisted that the surgical diseases of the bile passages, that they have classified and described as such, are now thought to be only the end results of gall-bladder infection. We find many articles written by surgeons that focus our attention on gallstones, as if gallstones were a disease that produce all the complications. With this idea in our minds, we are forced to the conclusion that if we will remove the stones the patient will be cured. We all know that this is far from the truth. Somehow, there is an idea extant that inflammation of the gall bladder, empyema of the gall bladder, large or contracted gall bladders, and many other conditions, are only due to the presence of gallstones.

We are seldom impressed with the idea that these are all end results of gall-bladder infection, and are only to be accepted as complications of the disease. If, as advocated by Birtch, of San Francisco, the old classification could be discarded and the idea of infection made clear to our minds, we would have made a long stride toward solving and understanding the problems of gall-bladder disease. What we need to do is to pay more attention to underlying causes, and then we would not be humiliated when at operation no stones are found. We will learn, after a while, to be more careful to pronounce the gall passages normal when we fail to palpate a gallstone, and ultimately attach far greater importance to the finding of adhesions about the gall bladder, the thickness and color of its walls, the enlarged lymph nodes that drain it, and the thickening and hardening of the head of the pancreas.

Rosenow has not only worked out clinically the connection between recognized bedside pictures and certain infections, but he has isolated the organisms concerned and produced in animals the same clinical pictures from which the organisms were taken originally. He not only has done this with gall-bladder disease, but he can do the same with cases of gastric and duodenal ulcer, enteritis, pancreatitis, appendicitis, hypertheroidism, arthritis, septic endocarditis, and other conditions. He has isolated from the walls of infected gall bladders certain strains of streptococci which, when injected into the circulation of animals, produce a typical cholecystitis, in the

course of which small, tiny gallstones may be seen to begin their development on the surface of the mucous membrane of the gall bladder. He questions the idea that cholecystitis or appendicitis is ever caused by infection from the bowel passing up the duct or into the lumen of the appendix. He claims that the microorganisms get into the circulation from some focus of infection, most often the teeth or the tonsils. What is true of the teeth and tonsils is also true of the nose and the sinuses of the head and the ear. We must also consider the genito-urinary tract and the pelvis in the female as foci of infection, following the entrance of the microorganisms into the blood stream from any focus whatever in the form of septic emboli. They are carried by the arterial current to the terminal radicals, where they produce all clinical manifestations of the different diseases, depending upon the particular affinity of the organism for special tissues of the body.

It is no more tax upon our credulity to accept this idea than it is to believe that typhoid bacilli has a selective affinity for Peyer's patches. This matter is no longer a matter of opinion or hypothesis, but it is a proven fact. The time has evidently passed when we may rest satisfied with the mere diagnosis and treatment of diseases; but we must go beyond all of this to the source of the infection, to the end that our patient may not again become the victim of a like attack. As long as a patient continues to carry in his body his original source of infection, he is at all times menaced by another attack. This is prophylaxis in regard to gall-bladder surgery, as it is to all other diseases with local foci of infection.

When it comes to the diagnosis of a diseased condition of the gall passages, we are met with insurmountable obstacles, because the signs and symptoms of the disease are so obscure. Records from the Mayo Clinic show that the earlier symptoms of biliary disease are not only very few, but that what we have are misleading. Every abdominal surgeon, when operating for other conditions in the abdomen, has been many times surprised to find in patients with no previous history of gall-bladder disease far-advanced and marked gross pathology of the passages. Again, autopsies reveal many strange conditions relative to the gall bladder, as, for instance, a gall bladder full of stones or a gall bladder drawn down by adhesions, making a bend or an-

gle in the common or cystic duct, and with all the adjacent organs found in a mass of adhesions, and yet with no symptoms or local discomfort ever pointing to the gall passages. Possibly the explanation of this is that at no time was there an obstruction to the flow of the bile; and this calls to our mind the possible fact that it is only when obstruction occurs that symptoms of pathology arise—or, in other words, that as long as we have free drainage, no functional disturbances are manifested.

Birtch, of San Francisco, in a recent article in the California State Journal, has described a very accurate clinical symptomatology of the early manifestations of the disease of the biliary tract. He says that the patient with gall-bladder disease complains most often of a vague upper-abdominal sensation and gastric distress. Flatulence is extremely common, and a persistent complaint of gas in a stout woman, who has had children, should arouse the suspicion of gall-bladder disease. There is frequent, sudden distention after eating, often painful, and requiring loosening of the corset and clothing. This weight and pressure are relieved by belching. If persistent, they may amount to actual pain. A sense of constriction and interference with deep breathing may be noted. A sudden "catch" may be felt on the right side when a deep breath is attempted. There may be a sense of heaviness or dragging in the right hypochondrium, at times a feeling as if the gas or stomach contents were forced against an obstruction at this site; a sense of relief and relaxation when gas is felt to pass through this obstructed place or "lump." These symptoms usually come suddenly, last for a short time, and disappear until another attack. They may be brought on by errors in diet or alcohol, may be caused by overtiring, by mild infections; may be precipitated by menstruation, by anger, excitement, or worry. Frequently, however, they cannot be referred to indiscretions in diet, nor do they have any relation to the time of taking food, as we find in duodenal and gastric ulcer. They often occur at night; they appear without rime or reason. General symptoms may accompany this recurrent "dyspepsia." There may be dullness, drowsiness, lassitude, aching in the back and extremities, occasional chilliness, or even a brief chill. Labial herpes is frequent. There may be an ephemeral rise of a degree or two in temperature; rarely there is persistent afternoon

temperature extending over weeks or months. Hyperacidity often marks this gall-bladder dyspepsia. Many patients complain of burning in the upper abdomen, of distress and pain from pylorospasm. Constipation is common, as is also a sudden distention of the abdomen from intestinal relaxation. Add to this Murphy's method of eliciting tenderness by pressing your finger under the right costal arch; ask the patient to take a full, deep breath, so that the gall bladder is pushed down below the costal arch; make sudden pressure and strike the finger forcibly with the other hand. If it is an acute gall-bladder lesion, you give the patient unmistakable pain.

The symptom complex described above would likely be accurate enough to enable men of acute diagnostic ability and vast experience in this class of disease to arrive at a correct conclusion in a large per cent of the cases. It is doubtful, however, if such a description would greatly assist men of moderate experience; for there are so many acute digestive disturbances connected with the upper portion of the alimentary tract, both functional and organic, manifesting almost the identical train of symptoms, that, with our present methods of diagnosis, differentiation is impossible.

Here it is that careful history taking is one of our best guides to lead us aright. When a careful history is taken of those who seek relief from gall-bladder trouble, it is not unusual to find that they have been suffering for a long period of time, and we are seldom, if ever, consulted when the patient has the first attack. Nearly all those patients give a history of stomach trouble covering a long period of time—as they express it, "severe attacks of indigestion." This leaves us often to jump at the conclusion that one of two organs is involved—namely, the gall bladder or the appendix—ignoring the stomach entirely; and it is not uncommon for the best of diagnosticians to fall into this error. Furthermore, it has been clinically demonstrated by nearly all observers that where we have infection in the gall bladder for a long period of time, we also have an infection of the appendix. Chronic appendicitis is often attended with gall-bladder pathology. In fact, time and again we operate for one disease and find the one organ healthy and the other affected. Kerr, after operating on 1,668 patients with gall-bladder disease, says that only in exceptional cases is it possible to say that

we have gall-bladder disease till some of the graver complications—such as gallstones, obstruction to the bile passages, colic, or empyema—are present.

Early diagnosis here is the *sine qua non*, as it is in other acute diseases; and some authorities seem to want to criticize the internist for not recognizing biliary tract disease in its incipency, and maintain that patients are brought to operations only when they present symptoms of late complications, such as colic, fever, chills, sweats, jaundice, clay-colored stools, or the passage of stones. These are all late complications of the disease before these symptoms develop. It is very well to say, after you are in the belly in the presence of these far-advanced conditions, that they should have been recognized and operated on sooner. I think the lack of definite symptomatology for incipient gall-bladder disease is due to the fact that we are in the habit of passing up all the gall-bladder cases with a slight examination until we are forced to consider them by symptoms of the far-advanced conditions, such as severe colic, jaundice, etc.

It has been interesting to note the progress in the development of the symptomatology of the hepatic disorders. Heretofore we have had to admit that we have been in almost total ignorance as to a list of symptoms or clinical data that would lead us to a correct diagnosis, but we are now beginning to note and come in possession of some of these constant symptoms and finer points of differentiation that we find associated with the incipient stages of these infections of the gall passages. It is unfortunate that the X ray, that has proven so wonderfully efficient in solving many of the other obscure conditions, is of little value here, except when gallstones are present. The radiograph gives us two kinds of evidence—direct and indirect; but both are related to the advanced stages of disease. The direct evidence consists of characteristic localized area of density on the plate that corresponds to the shape and size of a calculus. We must remember that many cases of gall-bladder infection do not have stones; and in those that do, unless there is a preponderance of lime salts in their formation, we get no shadow at all. The direct knowledge that can be obtained is limited to only a narrow field. The indirect evidence is afforded by the distortion of the neighboring hollow viscera, as a result of the adhesions asso-

ciated with the accompanying cholecystitis. The adhesions cause a deformity of the cap or the pars pylorica, or results in a kinking of the hepatic flexure. This, taken in connection with the other findings in the case, is sometimes very helpful in making out the case. Time will not permit us to go into the diagnosis of the far-advanced cases or the end results of gall-bladder infections, for we are familiar with the grosser lesions, and their diagnosis is comparatively easy.

When we seek for information regarding the treatment of these conditions or the type of operation to be performed in a given case, we will likewise many times be disappointed. In appendicitis the slogan is: "Operate as early as possible." Operate! Never mind the condition of the patient. In gall-bladder surgery we have a differently constructed organ to deal with, and we have found out that it is sometimes better to wait and get a patient in good condition and not operate during an acute attack of colic or fever—in other words, wait till acute symptoms subside, unless empyema or gangrene be diagnosed, when, of course, operation is imperative. In this waiting stage of the attack morphine in decided doses should be our sheet anchor to relieve pain and the increased peristalsis, and thereby favor the limitation of the disease by putting the parts at rest. I believe it to be the part of wisdom to advise surgical intervention when a patient has had two or three distinct attacks; for a delay often means serious damage, not only to the gall passages, but to the neighboring organs as well, such as pancreatitis, bands of adhesions, and other complications necessitating more difficult operative procedures and causing higher mortality, even in the hands of experts, and more likelihood that the patient will not be completely relieved.

A few years ago it was considered the proper treatment to drain all gall bladders where operation was indicated. This was accomplished by bringing the gall bladder to the surface or into the wound and fastening securely, then to immediately open and insert a tube, or do the two-step operation by waiting until adhesions take place between the gall bladder and peritoneum to prevent soiling of the cavity and then open the bladder. This has long since been found to be unnecessary, as the cases were sometimes followed by long-continued irritation of the skin from bile pouring out from a slow-healing sinus

or a kicking of the ducts or dragging pains from the stationary gall bladder.

It was next advocated that the gall bladder be sutured tightly about a good-sized draining tube and then dropped back into the abdominal cavity. When we begun to follow up our cases, at the end of two or more years, we found that this method in many instances failed to give satisfactory results. It was observed by all that when taking the history of these patients who had had their gall bladders drained, many still complained of indigestion, with constant continued distress in the region of the bile passages. Secondary operations revealed the fact that the gall bladder and neighboring organs were in worse condition than when the primary operation was done. They not only failed to get relief, but more symptoms were added to their distress. We were many times embarrassed to have our patients come back to us in a few months, necessitating another operation or become skeptics in regard to all surgical measures. This at once raised the question of the advisability of doing a complete removal of the gall bladder as a routine measure in all of these cases.

The Mayos a few years ago were the chief advocates of cholecystotomy. While on a visit to their clinics a short time ago, I saw drainage of the gall bladder in only one case, whereas over twenty cases were subjected to complete removal of the gall bladders when any great degree of pathology was shown.

Heretofore in our work—and we all have had similar experience—when we drained the gall bladder that was diseased to the extent that it did not check the pathological process and the patient had a return of the symptoms in a few months, it did not take us long to conclude that we should have removed it and that we were guilty of a mistake in our surgical judgment when we drained it. On the other hand, if simple drainage will restore the gall bladder to its normal condition and relieve all the symptoms, why do more? He who operates most recognizes that he should be a trained gall-bladder pathologist, or at least very familiar with all the phases and the gross appearance of the diseased organs, and be able to foretell the results to a great extent in all cases. If we are weak here, we will make mistakes in disposing of our cases. We must remember, too, that the mortality depends in many cases upon the type of operation se-

lected. It is lowest in cholecystotomy, more in a cholecystectomy, still greater when we incise and try to close the bladder or anastomose it to the intestines, and greatest in surgery of the ducts.

One naturally concludes from his experience that cholecystectomy is the only method that is a certain cure. The surgeon must decide for each individual case. To guide us aright, Crile has submitted some simple rules to be observed. If the gall bladder has approximately normal walls and the cystic duct is patulous, as is manifested by a free appearance of normal bile in the bladder when it is opened, then, no matter what the size or number of the stones, no return of the symptoms will follow a simple drainage. Again, he insists that where we have acute cholecystitis, with severe symptoms, with the patient not in the best of condition, mere drainage, to be followed by cholecystectomy if we have a return of symptoms, is preferable and freer from danger. On the other hand, if the mucous membrane of the bladder be gangrenous or covered with large strawberry granulations, if there be a stone imbedded in the cystic duct, or if there be no bile in the gall bladder, or if the walls are thick with scar tissue and an organ contracted with adhesions, a cholecystectomy is clearly indicated.

It is claimed by some surgeons that where we have involvement of the head of the pancreas or enlargement of the liver, drainage maintained for some time from the bladder will do much to clear up the associated pathology. This is true; but it can be done by draining from the cystic duct as well as from the gall bladder, and should always be done when the common duct is thick and distended, when there is history of colic, chills, fever, sweats, and jaundice, also where the liver is enlarged and indurated with hardness of the head of the pancreas, and when evidence of cirrhosis is present. The tube is stitched into the end of the stump and treated as a case of drainage of the gall bladder. Operations upon the common duct, even in the hands of the most experienced expert operators, are unfortunately attended with a high mortality rate as compared to all other operations upon the gall passages. The mortality is not so much due to the difficulty of the operative technic as it is to the desperate condition for which the operation is done. The surgeon sometimes neglects to surmount his operative risk until the patient is through

with the operation and trouble begins to show itself in profound shock, hemorrhage, and heart or kidney complications. Nearly all of these could have been determined beforehand, and by special attention here many bad operative risks will be rejected and the mortality reduced. Whether the case falls in the hands of the physician or surgeon, the entire profession is to a certain extent judged by the outcome. The only way to make any progress in the treatment of the bile passages is for the internist to give us a more definite symptomatology while the surgeon is busy with the perfection of the operative technique.

DISCUSSION ON THE PAPER OF DR. COWDEN.

DR. WILLIAM D. HAGGARD, Nashville: I have enjoyed the paper of Dr. Cowden very much indeed. It was very thorough and complete. There is very little to disagree with. No discussion is profitable unless we can materially disagree with the essayist. I believe, however, that we are coming to the conclusion that the early symptoms which the essayist described should be given heed to. It is not uncommon for a patient to complain for years of so-called "indigestion" or "dyspepsia" which is entirely due to the gall passages. I think a clear understanding can be summed up by the history, particularly in a woman or women who have borne children; for by inquiring into the history of dyspepsia, the first evidence is that while nursing the child the woman had a colic or had forgotten it until it is dug up again. It is a so-called "uterine colic." A great many of these gallstone attacks originate in the puerperium. I presume it is due to the fact that the liver has twice the elimination that it is usually called upon to do for the mother and child, and to the added fact of infection at that particular period—a point which the essayist stressed and which may be the cause of the trouble in the gall bladder; so that really now we look upon infections of the gall bladder as lymphatic—that is, the infection is from behind and it has come from the various and sundry sources throughout the body. Realizing that fact, we must look upon it as an infection and the stone or stones really as a terminal process.

Common duct obstruction has been overdone in our discussions hitherto, and Dr. Cowden has called our attention to these chronic conditions. I saw a patient yesterday who gave a striking story of discomfort, gas, belching, constipation, and pain under the right costal arch—not colicky, not cramplike—and it went through the back. I know full well she must have gall-bladder infection. Now, operation is not urgently indicated in that particular instance; but it is, nevertheless, a case that should be watched with proper dietetic management; that we ought, at least, recognize it; and it is our duty to explain the probabilities of the case to the patient, so that she can be watched. I do not know that

we are justified with a slight trouble of that kind to urge an immediate operation; but, to say the least, we should be on the lookout for any complication that may arise.

One more point. Shall we remove the gall bladder or shall we drain it? That is a question that has been discussed a great deal of late, and I think our practice has been crystalized into about what has been said—namely, that if the case is quite acute and it would add something to the mortality to remove the gall bladder, drainage should suffice; whereas if the patient is not too sick or too fat and the common duct is patent, it is a simple and easy matter to remove the gall bladder. When shall we decide in that type of case? If the glands are enlarged, simple drainage of the gall bladder will not effect a cure. If the glands at the fundus of the gall bladder and along the common duct are enlarged, then I should say remove the gall bladder from below upward. I may say that while in the hands of the great experts the mortality is said to be a trifle lower than in cholecystotomy, at the same time we must recollect that cholecystotomy is selected preferably in the bad cases, and it does not mean that the balance of us can remove the gall bladder with the same slight risk that we can drain it.

One thing further. We must not forget that a certain proportion of these cases will degenerate into malignancy. Sometimes less than four per cent as they come to the surgeon with long-standing biliary disease are associated with cancer. In one instance of empyema in which the gall bladder was very thick, particularly its walls, I was chagrined at the end of a year to have the patient return with inoperable carcinoma.

DR. WILLIAM LITTERER, Nashville: All gall-bladder trouble is certainly primarily due to bacterial infection. This infection cannot always be demonstrated, which may be due to some faulty technic or to the fact that the infection is worn out and a stone has remained, resulting in a chronic irritation. It is probable that the infection is still there and is deep down in the tissue, consequently is overlooked by the ordinary methods.

Rosenow has shown by various culture methods and by his special technic that he can isolate some type of the streptococcus in a great majority of instances. Since the work of Rosenow of last year, I have been following his technic as routine in all gall-bladder cases at the St. Thomas and Vanderbilt Hospitals and in a number of local infirmities, and have collected about one hundred cases. I find quite a number of typhoid infections, which is out of proportion to what the other investigators have found. It is true that the streptococcus (viridans or hemolyticus) was the predominating microorganism found; still, an unusual number of typhoid infections were recorded. I also found a number of cases of straight typhoid infection in which they gave no typhoid history. Likewise the paratyphoid bacillus was isolated from four cases of infected gall bladder in which the patients gave no history of typhoid infection.

Dr. Burch, four or five years ago, had a gall-bladder case in which I isolated paratyphoid A. bacillus. He

also had a similar case last summer. Two gall-bladder cases at St. Thomas Hospital of paratyphoid B. were isolated within the past three months. These paratyphoid infections are not infrequently mistaken unless you carry them out to the fullest extent.

I simply call your attention to the fact that there are a great many cases of gall-bladder infections attributed to the typhoid or paratyphoid group.

RECTAL FEEDING.

BY GEORGE M. NILES, M.D.,
Atlanta, Ga.

The administration of food by the rectum is a method that dates back to antiquity. *Ætius* and others mention it, and writers of the Middle Ages refer to it, though not in satisfactory terms, as they probably did not obtain success on account of their imperfect technic. *Voit* found that a dog's rectum would not absorb egg albumen and water unless sodium chloride were mixed with it. Later, *von Leube* advised the use of albumen to which chopped pancreas had been added. *Ewald*, however, showed that this was unnecessary, and that albumen, neither peptonized nor pancreatinized, could be absorbed, especially if a small amount of salt was added. The presence of salt seems to cause reverse peristalsis, and *Grutzner* has demonstrated that substances introduced with the salt solution may later be found in the stomach.

Many varieties of food may be utilized in rectal alimentation. Protein may be supplied in the form of predigested meat or egg albumen, to which salt has been added. Of the carbohydrates, grape sugar seems the most available, though not more than six ounces of a 10-per-cent solution should be allowed, as it tends to provoke looseness of the bowels. Starch has been used in many forms, solutions containing it being readily digested and absorbed. Fat also may be used, but not more than one-half ounce in the twenty-four hours is advisable. Such fats as cream or oil may be employed, but I prefer melted butter added to the enema. Should rectal feeding be kept up for some time, it will be best to combine different articles, as well as to change the form of administration.

Bauer believes that but one-fourth of the nu-

triment required by the body can be absorbed by the rectum, and both he and the earlier writers placed the limit of time during which rectal feeding was practicable at two weeks. Later writers have placed the caloric absorption by the rectum even lower, and it is now a fairly well-established fact that under ordinary circumstances the rectum cannot be expected or made to digest and absorb more than three hundred calories daily. Therefore, while this method of alimentation is a most useful adjunct and is of great help in tiding a patient over an emergency, the physician should not feel that he is in any sense adequately supplying the needed daily calories.

The successful administration of nutrient enemas depends on knowledge and care. With careless or faulty technic, the food is not retained, the rectum and anus become irritated, and failure is the result. In hospitals, or where a specially trained nurse is at hand, the physician may give general directions; but in the absence of these, very explicit directions are requisite.

METHOD.—The rectum should be cleansed well by a rather high enema of normal salt solution at least once daily. Cleansing before each feeding, as some recommend, is too often. Should the rectum be inflamed, a solution of boric acid may be used instead of the salt solution; and if there is much stringy mucus, a solution of sodium bicarbonate—a teaspoonful to the pint of water—is helpful. If there is an inclination toward tenesmus, a return flow catheter or recurrent tube should be used for the cleansing enema. The temperature of the cleansing enema may be as hot as 95 to 105 degrees Fahrenheit, but the nutrient enema should be strictly between 90 and 95 degrees Fahrenheit, as solutions too hot or cold are promptly rejected.

Unless prevented by some condition of the disease, the patient should lie on his left side, with his hips well elevated. A rectal tube or large catheter may be employed—not too large, though. A tube about 16 or 18 English is proper, smaller ones being needed for children. The tube should be well lubricated, but not with glycerine.

As the tube is introduced, it should be rotated slightly; and if any folds of the rectum impede its progress, a little fluid should be allowed to flow. This will "balloon" the rectum and allow the tube to advance easily eight or ten inches, or even more. It is well for the tube to ascend as high in the rectum as is practicable; but if efforts

are put forth to carry it too high, the tube is liable to double upon itself in the distended rectum, and the inflowing current, instead of pointing up, will point down.

The enema should be allowed to flow in slowly from a funnel or fountain. The former Davidson syringe, in which the fluid was sent in by intermittent jets, did not give satisfaction. Air should not be injected with the fluid. Should the patient complain of a desire to evacuate the bowel, the flow should be discontinued until the desire abates and then slowly resumed. By tact and patience the enema may be injected with perfect comfort generally; but if the nurse is hurried or the patient fretted, the fluid will in all probability be ejected in a short while.

After the injection, the patient should lie as quietly as possible for an hour or more and be instructed to use every effort to retain the enema. A pad or towel may be pressed over the anus for about twenty minutes; and in the meanwhile, if the nurse will divert the patient's mind from his rectum, the uncomfortable sensations of fullness there will soon cease. If the rectum is very irritable, the nutrient enema may be preceded by a small suppository of opium and belladonna or a very small rectal injection of warm starch water containing about fifteen drops of the tincture of opium. The frequent use of opium, however, is to be deprecated. Should hemorrhoids complicate the situation, they may be painted with a 2-per-cent cocaine solution previous to introducing the tube, and a soothing ointment may be applied between times.

The amount to be given at each injection is important, and should be regulated with judgment. As a rule, it is not well to exceed eight ounces, and six ounces is generally better. Should this be retained with difficulty, a smaller amount should be used.

The interval of time between enemas and the number daily will depend on the condition of the rectum. For a few times it is feasible to administer nutrient enemata four hours apart, but it is seldom that a rectum will bear them long unless about six hours are allowed to elapse between. About four times daily will be generally found the limit if this method of feeding has to be kept up for an extended period.

INDICATIONS FOR NUTRIENT ENEMATA.—(1) In extremely weakened conditions, as in fevers or

other exhausting diseases. (2) In obstruction of the pharynx or esophagus, where the patient is unable to swallow food. (3) In organic diseases of the stomach (malignant or nonmalignant), where it is desired to give that organ a complete rest; also, though rarely, in severe vomiting from irritable stomach of nervous origin. (4) In delirious, comatose, or insane persons, where it is impracticable to feed through the mouth.

The following suggestive formulas are recommended by the several authorities mentioned:

Von Leube advises 5 ounces of scraped meat, chopped very fine; and to this is added 1½ ounces finely chopped pancreas. The whole is suspended in 3 ounces of lukewarm water and stirred to the consistence of a thick pulp. This makes one injection. Pancreatin or peptonizing tablets can be as well used as the pancreas itself.

Mayet uses 150 to 200 gm. of pancreas bruised in a mortar, with water at a temperature of 100 degrees Fahrenheit, and then strained through a cloth; 400 to 500 gm. of lean meat is chopped fine and the strained pancreatic fluid mixed with the mince, together with the yolk of one egg. This is allowed to stand for two hours, and should be administered at the body temperature. The quantity is sufficient for twenty-four hours' nourishment, and should be administered in two parts.

Rennie's formula consists of ½ pound of lean meat pulled into shreds and added to a pint of beef tea. To this are added 1 drachm of fresh pepsin and ½ drachm of dilute hydrochloric acid. The mixture is kept at a temperature of 99 degrees Fahrenheit for four hours, during which it is stirred constantly. If too great heat be employed, the digestive process will stop.

An enema which Bidwell employs is made as follows: Milk, 2 ounces; strong beef tea, 2 ounces; yolk of egg, 1; pancreatic solution, 1 drachm. This is to be prepared one hour before use and to be kept at a temperature of 100 degrees Fahrenheit. From ½ to 1 ounce of brandy is added, when necessary, immediately before use.

Greig Smith uses 1 egg beaten up in 6 ounces of milk, with 2 or 3 teaspoonfuls of meat jelly; or peptones may be added. This is administered warm, with or without ½ ounce of brandy, every five or six hours.

Other recipes for nutrient enemata are as follows:

Egg-and-milk Enema:		
8 ounces sweet milk	-----	170 calories
3 eggs	-----	200 calories
½ teaspoonful of salt.		
		370 calories
Starch-and-milk Enema:		
About 2 ounces starch	-----	250 calories
8 ounces sweet milk	-----	170 calories
		420 calories
Sugar-and-milk Enema:		
2 ounces grape sugar	-----	246 calories
8 ounces sweet milk	-----	170 calories
Von Leube's Milk-peptone Enema:		
8 ounces sweet milk	-----	170 calories
2 ounces peptone	-----	100 calories
		270 calories

In addition, the enemata may be thickened with a little mucilage, or a few drops of tincture of opium may be added. Should the rectum be extremely sensitive, the enema may consist of plain warm water, to which is added the albumens of two or three eggs. It is the custom to add to these enemata various predigested foods, alcoholic or otherwise; and they seem to be borne quite well, though their supportive value is problematical.

NOTES AND COMMENTS

You are about to buy something. Have you looked over the ads. in the Journal?

On December 31, 1916, the enrolled members of the Tennessee State Medical Association numbered 1,607.

On January 1, 1917, the membership roll for this year contained the names of 128 members reported by the good secretaries of fourteen counties.

Dr. Frank Griffin, Tiptonville; Dr. M. H. Allen, Lafayette; Dr. J. J. Rucker, Rutherford County; Dr. O. W. Hauk, Sullivan County, are the physicians of the Sixtieth General Assembly now in session at Nashville.

The secretaries of Campbell, Putnam, Hamilton, Davidson, White, Scott, Hardin, Smith, Dyer, Grundy, Decatur, Monroe, Polk, and Madison Counties made partial or complete 1917 reports on or before January 1.

If you want reprints of your paper published in the Journal, order at once as soon as you receive notice of publication. It will save you money.

The annual banquet of the Chattanooga Academy of Medicine and Hamilton County Medical Society was held at the Mountain City Club on January 5.

Dr. E. W. Patton is at the Postgraduate, in New York, pursuing his studies on eye, ear, nose, and throat work. He will return to his home in Shelbyville about February 25.

The Southern Gastro-Enterological Association is a new society which was organized at Atlanta on December 15, with Dr. J. C. Johnson, Atlanta, President, and Dr. Marvin H. Smith, Jacksonville, Secretary-Treasurer.

Since the publication of the status of the fund for the prosecution of illegal practitioners was made a few months ago the following subscriptions have been paid: Dr. W. S. Farmer, \$2; Memphis and Shelby County Medical Society, \$50; Johnson City physicians, \$15.

The Hardin County Medical Society has come into the State Association with eight members for 1917. We most heartily welcome this addition to the state organization, and hope to have most of the Hardin County members present at the annual meeting on the first Tuesday in April.

Dr. B. F. Fyke, after fourteen years of service as Secretary-Treasurer of the Robertson County Medical Society, refused reelection, and was succeeded by Dr. H. S. Shoulders. Dr. Fyke was always on time with reports and always correct in every detail of his work. We hate to see him retire, but welcome his successor into the ranks of secretarial workers.

Additional honors have come to two of our distinguished members—Dr. Duncan Eve, Sr., and Dr. W. D. Haggard. Dr. Eve was made President of the Southern Medical Society at Atlanta, while Dr. Haggard was elected to the Presidency of the Southern Surgical and Gynecological Society at its annual meeting in December.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn.****JANUARY, 1917****EDITORIALS****MORE INCOME FOR MORE OUTLAY.**

If the doctors of Tennessee will compare their bills received on January 1, 1917, with those they were called upon to pay January 1, 1916, they will find that the necessities for which they had to pay this year cost from forty to two hundred per cent more than they cost a year ago.

The people are paying their doctors now just what they paid a year ago for like service received.

What's the answer? The answer is: *Poor doctors—poor in pocket and poor in ability to render scientific service.*

What's the remedy? *Give better service and demand better pay.*

The doctor must eat; must wear clothes—a shade better than those worn by other men; must have a home; must pay for life insurance; must contribute to his church and charities; must burn coal and pay for his laundry; must meet the cost of living just like other men.

Beyond all this, the doctor must meet expense that the average layman is never called upon to carry. He must have an office; must have an automobile, and, if in the country, horses, too; he must pay for two or three telephones; he must buy expensive textbooks and subscribe for scientific journals; he must provide himself with instruments and apparatus that are indispensable and are expensive; he must, if he does his duty, keep up membership in scientific societies, must go to the meetings of these societies, and must go, from time to time, to the clinics and hospitals in the larger medical centers for study.

Our doctor granddaddies paid two dollars and a half for shoes, three cents a pound for

flour, eight cents a dozen for eggs, had no telephone and no automobiles; but they made the same charges for professional services that our doctors make to-day, when shoes cost eight dollars, eggs fifty cents, and automobiles whatever the garage man can get.

The doctor of 1917 who wants to keep out of debt and give value received to his patients *must* increase his charges unless a most decided reduction is effected in the cost of living.

HEALTH AND SANITATION IN THE UNITED STATES NAVY.

On the fifty-seventh page of the eighty-page Report of the Secretary of the Navy for the year 1916 we find a section which deals with health and sanitation in our navy. This section begins: "The chief object of concern in the navy to the Surgeon General and the Medical Corps is the matter of health and sanitation and the clean living of the personnel essential to efficient service." What follows this opening paragraph, in the two pages and a half devoted to "health and sanitation," is a statement of some remarkable results which have followed upon the most wonderfully efficient work of the Surgeon General and the Medical Corps.

It strikes us that health and sanitation in the navy should be "the chief object of concern" to some others than "the Surgeon General and the Medical Corps." Also, it strikes us that the achievements of "the Surgeon General and the Medical Corps" have been important enough and striking enough to entitle them to occupy a more leading place for discussion than the fifty-seventh page of an eighty-page report.

However, Secretary Daniels' report makes it clear that the Medical Corps has been increased from 347 officers and 1,500 men to 600 officers and 3,000 men; that the appropriation for the medical department of the navy has grown from \$682,000 last year to \$1,187,728 for 1916; that a new model hospital ship is being built; that very rigid physical requirements are being maintained to prevent the unfit from enlistment; that promotion and higher rank are now accorded commissioned officers; that the Hospital Corps has been reorganized, and that

two fine schools have been established for the men of this corps; that nurses' schools and homes have been created; and that a correspondence school has been initiated for the purpose of preparing the officers in the Medical Reserve Corps.

Taking it all into consideration, it would appear that the medical department of the navy is in a fair way to get, some of these days, the attention it deserves by right of achievement. It may even get up to the fiftieth page of eighty pages if "the Surgeon General and the Medical Corps" will continue to make health and sanitation their "chief concern," and if they will continue to reduce morbidity and mortality as they have done by their splendid work in the past.

A SURGICAL TRIUMPH.

It would seem that the great war in Europe, with all its horrors, has brought some blessings to mankind through the opportunities it has made for scientific discovery. One of the greatest of these, it appears, is that which has come out of the work of Dr. Alexis Carrel and his associates on antiseptics. There would seem to be no doubt but that an enormous loss of life and limb has been prevented by the treatment of wounds of soldiers with Dakin's neutral solution of hypochlorites, or with another substance which is even better than the hypochlorites, known as paratoluene-sodium sulphochloramide. These solutions are said to have equal germicidal powers, but the latter named is less irritant. Wounds are kept moist with the solution which is carried, as far as possible, into the depths of the wounds through one or more tubes properly placed and maintained in position. All dressings are also kept moist and wounds are not allowed to heal until bacteria have disappeared from smears taken daily for microscopic examination.

The results which have been reported in the treatment of the wounded soldiers seem to indicate that Dakin, the originator of the antiseptic solution, and Carrel, the author of the methods applied, have revolutionized the treatment of infected wounds, have finally established the value of antiseptics, and have done mankind a service that will perpetuate

their names along with those others of the men of medicine whose achievements have won for them undying fame.

JUST LOOK AT SHELBY COUNTY!

The Memphis and Shelby County Medical Society has set a new mark for membership among Tennessee medical societies. On December 16, 1916, the Secretary, Dr. W. Likely Simpson, reported the 208th name for 1916 enrollment. The total membership of the State Association on that day was 1,593; so, it will be seen, Shelby County has furnished nearly one-seventh of the members of our society for this year.

While it is true that Shelby County has more doctors than any other of our large counties, it is also true that a larger proportion of them are members of their county medical society than in any other of the big counties.

There's a reason for this—several of them, in fact. Here are some of the reasons which we know about: (1) President J. J. Cullings, Vice President W. Britt Burns, Secretary W. Likely Simpson, Member E. C. Ellett and about 204 other members. (2) All of these believe in a county medical society and believe in *their* county medical society. (3) The whole status of medicine is on higher ground in Shelby County than ever before. (4) The doctors of Memphis and Shelby County are, as is quickly apparent to any physician who spends a few hours in Memphis, working at medicine—trying in their hospitals, in their medical school, in their City Health Department Laboratory, in their county medical society, in other medical societies, and in their offices and at the bedsides of their patients to learn and apply scientific methods of diagnosis and treatment. (5) There's a Memphis and Shelby County *spirit* among them. (6) They have come to realize that Shelby County is a part of Tennessee, and that Tennessee so believes and is proud to believe it; that Tennessee state medicine wants them, needs them, is glad to have them right "in the middle of things," and is ready to go right down the line with them.

The editor of the Journal has called very often in these last three years on Memphis and Shelby County men for one or another service for the good of the state organization. With two exceptions, every call has been promptly, pleasantly,

and effectively answered by delivery of the goods. The two "exceptions" are not yet despaired of, for we have their promises—one of them three years old, it's true—and we confidently expect a one-hundred-per-cent compliance.

Here's to Shelby County—including Memphis!

THE FIRST 1917 REPORTS.

Dr. W. R. Irish, Secretary of the Campbell County Medical Society, was the first to send in 1917 membership reports, having forwarded to the State Secretary six names with 1917 dues and three medical defense assessments on December 4. Dr. C. P. Martin, Secretary of the Putnam County Medical Society, was the second man heard from, with seven names and medical defense for all of them. Dr. Douglas Hayes, acting for Dr. H. Lockhart, Secretary of the Grundy County Medical Society, and Dr. E. L. Wilkins, Secretary of the Dyer County Medical Society, got their 1917 reports in soon after, three names, with two medical defense assessments, coming from Grundy, and eight names, with five medical defense assessments, from Dyer. We are most grateful to these gentlemen for their very prompt reports. The indications are that we shall have more members enrolled on January 1, 1917, than ever before on a corresponding date. We hope that all county secretaries will urge their members to pay dues promptly, so that we may have things in businesslike order and that the State Association and all component societies will be kept thoroughly alive.

HEALTH NEWS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

The United States Public Health Service issues a weekly sheet which it calls "Health News" and which is sent to newspapers, magazines, and medical journals all over the land. This little sheet carries one week a splendidly presented discussion of the main points to be considered in connection with some public-health problem, while the next week's issue calls the attention of its readers very pointedly to important preventive measures against disease. Below we reproduce the copy of "Health News" for the week of December 6, 1916. The Service

cares nothing about whether it receives credit from periodicals using its "news." This Journal has made free use of the little sheet, and will continue to do so; but we want our readers to know where the little one-line "fillers" so frequently seen in our columns come from. We believe that the "Health News" of the United States Public Health Service is a valuable publication.

DO YOU KNOW THAT

A little cough often ends in a large coffin?
Bodily vigor protects against colds?
Careless sneezing, coughing, spitting spread colds?
Open-air exercise cures colds?
Colds sometimes get well in spite of the excessive use of alcoholic beverages?
Overheated, air-tight rooms beget colds?
Neglected colds often forerun pneumonia?
Persistent, oft-repeated colds indicate bodily weakness?

MEDICAL DEFENSE FOR MEMBERS.

In the table which appears below Dr. S. R. Miller, chairman of the Committee on Medical Defense, has given the number of members of each county society who paid medical defense assessments in 1915 and in 1916. The showing made is a very poor one and beyond our power to explain. Why only 694 of 1,593 members in 1916 have chosen to take advantage of the very cheap and very effective protection afforded through the medical-defense plan of the State Association is more than we can understand. Perhaps Dr. Miller, who has worked so faithfully to make this movement successful and a real benefit to our members, can offer an explanation of the very apparent unwillingness of our members to support it. Perhaps some of the 900 who have refused to pay the assessment can give some valid reasons for their refusal. We shall be glad to give space in the Journal for these explanations, if any are offered.

By dint of much hard work the Tennessee State Medical Association has grown to be a large organization, embracing in its membership approximately two-thirds of the practicing white physicians in the state. Now that most of the doctors eligible to membership are in the association, the society should be worth something to the individual member and should do thoroughly what it purposes to do. If what it undertakes cannot be well done, it should not be done at all.

The medical-defense movement should be made a complete success or should be dropped.

Effort has been made, time and again, to put this matter before the members of the association, so that they may understand what the benefits of medical defense for members are or can be made to be, just what can be expected of the operations of the plan, and just what members who desire to avail themselves of the protection thus offered must do. Still, it seems, many do not understand—as, for instance those who apply for defense in suits brought against them for alleged acts of malpractice prior to the time of paying their assessments. You are protected only from the time at which your assessment is paid to the chairman of the Committee on Medical Defense until December 31 of the year in which the assessment is paid, *and* only in suits brought against you for alleged acts of malpractice committed after your assessment was paid.

Medical defense for members can be made a powerful aid to better organization and a valuable means of protection to our members. It is not like Tennessee doctors to let the thing fail.

Let every member pay his 1917 membership dues and his medical-defense assessment into the hands of his county secretary *now!*

NUMBER PAYING FOR MEDICAL DEFENSE.

County.	1915	1916	County.	1915	1916
Anderson -----	13	11	Loudon -----	1	2
Bedford -----	15	15	McMinn -----	1	0
Blount -----	2	1	Macon -----	0	4
Campbell -----	2	1	McNairy -----	5	13
Carroll -----	19	10	Madison -----	29	29
Coffee -----	0	4	Marshall -----	16	13
Cumberland -----	5	6	Maury -----	1	2
Davidson -----	129	136	Monroe -----	10	11
Dickson -----	2	3	Montgomery -----	6	9
Dyer -----	16	23	Obion -----	7	4
Fayette -----	1	2	Overton -----	8	0
Franklin -----	5	8	Putnam -----	18	13
Gibson -----	20	22	Rhea -----	6	9
Giles -----	19	21	Roane -----	10	7
Greene -----	2	3	Robertson -----	7	11
Grundy -----	8	8	Rutherford -----	0	5
Hamblen -----	9	15	Scott -----	0	9
Hamilton -----	17	20	Shelby -----	67	33
Hardeman -----	1	0	Stewart -----	1	0
Haywood -----	9	4	Sullivan-Carter-		
Henderson -----	4	3	Johnson -----	5	2
Henry -----	1	3	Sumner -----	13	9
Hickman -----	1	0	Tipton -----	11	20
Jackson -----	12	12	Warren -----	4	2
Jefferson -----	16	16	Washington -----	13	16
Knox -----	61	68	Weakley -----	11	13
Lake -----	1	3	White -----	14	12
Lauderdale -----	1	2	Williamson -----	7	7
Lincoln -----	14	14	Wilson -----	4	5

Total paid—1915, 680; 1916, 694.

AGAINST HEROIN.

It was regularly moved by Dr. Frederick Peterson and seconded by Dr. Samuel W. Lambert that it be resolved that, in the opinion of the committee, the drug heroin is of no real value in the practice of medicine, and that its place may be better taken by more efficacious agents that do not menace public welfare.

Resolved, That the committee recommend Federal legislation to prevent the importation, manufacture, and sale of heroin in the United States of America.

[Signed] SAMUEL W. LAMBERT, M.D.;
FREDERICK PETERSON, M.D.;
CHARLES F. STOKES, M.D.;
FREDERICK TILNEY, M.D.;
SIMON BARUCH, M.D.,

Chairman Committee on Drug Addiction;

HELEN HARTLEY JENKINS,

Chairman Committee on Social Hygiene.

Attested:

JOSEPH D. SEARS, *Secretary.*

The above extract from the minutes of the Committee on Drug Addiction of the Committee on Social Hygiene of the National Committee on Prisons is the first step in what should be a successful movement to rid the nation of an unnecessary and most baneful drug.

ARSENOBENZOL (PHILADELPHIA POLYCLINIC).

Dr. Schamberg explains that the Dermatologic Laboratory of the Philadelphia Polyclinic availed itself of the opportunity to supply their product when salvarsan was not obtainable. Having so served this purpose in the interest of humanity and the public health, the marketing of their product was discontinued when the German product became again available. The laboratory is not established for commercial purposes, and could not afford to become embroiled in patent litigation, which would no doubt be instituted by the owners of the salvarsan patent.—*Journal of American Medical Association*, December 9 1916, page 1776.

WHICH BROKE—THE ICE BAG OR THE APPENDIX?

"Freeze it," said the neighbor;

Said the parent, "Ain't that nice?"

An ice bag laid on Johnnie,

And then Johnnie laid on ice.

—L. M. K., in *The Medical Pickwick*.

SOCIETY PROCEEDINGS

SUMNER COUNTY.

The Sumner County Medical Society met in Gallatin at 10 A.M., December 6, 1916, with Vice President Dr. Homer Reese in the chair. Officers were elected for 1917 as follows: President, Dr. Homer Reese; Vice President, Dr. R. N. Buchanan; Secretary-Treasurer, Dr. J. R. Parker. Dr. B. S. Galbraith was reelected Censor for three years, and Dr. L. M. Woodson was chosen to represent the society in the House of Delegates, with Dr. W. N. Lackey alternate.

The society went on record as most heartily indorsing the plan proposed by Dr. H. H. Shoulders as presented in his splendid paper in the Cincinnati Lancet-Clinic, entitled "How the State Should Deal with the Tuberculosis Problem."

Adjournment was taken until the next regular time for meeting—the first Wednesday in January, 1917.

JOHN R. PARKER,
Secretary.

THE SULLIVAN, CARTER, AND JOHNSON COUNTY MEDICAL SOCIETY.

The Sullivan, Carter, and Johnson County Medical Society held its annual meeting in the Commercial Club Rooms, at Bristol, December 6, twenty members being in attendance.

The election of officers for 1917 resulted in the selection of Dr. D. R. Stout, of Butler, Tenn., for President; Dr. L. B. Snapp, of Blountville, Vice President for Sullivan County; Dr. N. D. Robinson, of Carter, Tenn., Vice President for Carter County; Dr. H. M. Smythe, of Mountain City, Vice President for Johnson County; and Dr. W. K. Vance, of Bristol, Secretary-Treasurer.

This society was never in a more flourishing condition. During the past year eighteen new members have been added to its roll, and three associate members, the latter being residents of Virginia. At this time we have fifty-five regular members and eight associate members. Our only regret is that there are still twenty-nine eligible physicians in the territory represented who thus far have not signified their desire to join with us in elevating the tone of the profession.

I regret to say that we have a few members who have never attended a meeting of the society. When we succeed in getting one of this class to come once, we know he will come again, for the reason that we have learned that the best way to appeal to an East Tennessee doctor's head is through his stomach. At the meetings held during the past summer at Elizabethton, Bluff City, Roan Mountain, Butler, Mountain City, and Hampton, the meals set before us were fit in quality for kings and in quantity for starving Mexicans. At the meeting here yesterday the local physicians who were in attendance had the following bill of fare served in the dining room of the Commercial Club:

Celery.	Cole Slaw
Roast Turkey	Cranberry Sauce
	Mashed Potatoes
Oysters a la McHale	Peas
Hot Rolls	Cheese
	Wafers
Ice Cream	Fruit Cake
Coffee	Cigars

Partly in consequence of the above-mentioned inducements, there has not been a meeting omitted since the society was organized, and we do not anticipate one in the future.

Yours,
W. K. VANCE,
Secretary.

BEDFORD COUNTY.

The Bedford County Medical Society met in regular session on December 21, 1916, and was called to order by President Dr. S. S. Moody.

Minutes of the previous meeting were read and adopted.

Dr. Moody read his retiring address on the subject, "Mortality Statistics and Comparisons."

The election of officers for 1917 resulted in the election of Dr. T. R. Ray for President; Dr. J. H. Dyer, for Vice President; and Dr. F. B. Reagor was reelected Secretary and Treasurer. Dr. J. P. Taylor was elected Censor for the next three years, making the Board of Censors for the next year: Dr. J. P. Taylor, for three years; Dr. J. K. Freeman, for two years; and Dr. T. R. Ray, for one year. Dr. F. B. Reagor was elected delegate to the State Association for 1917, and Dr. G. W. Moody was made alternate delegate.

A communication from the North Nashville

Medical Society was read asking the coöperation of our members in having a law enacted at the coming Legislature to make a reasonable maternity fee collectible without any exemption whatever. This was unanimously indorsed, and each member pledged himself to see and urge our Representatives in the Legislature to vote for this kind of bill when presented by the Representatives of Davidson County.

The society adjourned till the next regular meeting in January, 1917. F. B. REAGOR,

Secretary.

HARDIN COUNTY.

The Hardin County Medical Society met at Savannah in regular session on December 28, 1916, with Dr. G. C. Morris, President, in the chair. Because of the rough weather, members from out of town were scarce.

The following papers were read and discussed: By Dr. J. G. Jowers, Olive Hill, on "Malaria;" by Dr. C. F. Gilbert, on "The Practical Use of the Blood-Pressure Instrument;" by Dr. J. O. Irwin, on "Pneumonia;" by Dr. E. B. Walker, on "Diphtheria."

Despite the small crowd, an exceedingly profitable and pleasant time was enjoyed by all present.

The names of the following members were sent in to the Secretary of the State Association for 1917 membership: Drs. G. C. Morris, E. B. Walker, L. C. Smith, J. O. Irwin, C. F. Gilbert, J. G. Jowers, R. L. Douglas, O. H. Williams. New life has been instilled into our society, and we are coming to the front in affairs for a better medical profession in Hardin County.

O. H. WILLIAMS,
Secretary.

WILSON COUNTY.

The Wilson County Medical Society met in regular session Wednesday, December 6, with the President, Dr. J. R. Bone, in the chair.

After the minutes of the previous meeting were read and approved, some very interesting case reports were made and discussed.

Reports were made on the sale of stock and the buying of new equipment and repairs for the Lebanon Hospital, which is progressing nicely, and when completed is expected to be

to Lebanon what the Galloway Memorial Hospital will be to Nashville.

Dr. J. J. McFarland presented a thorough and practical paper on "Puerperal Eclampsia," which was ably discussed by every member present.

Officers for the year 1917 were then elected and installed as follows: President, Dr. Sam McFarland, Lebanon; Vice President, Dr. M. H. Wells, Watertown; Secretary and Treasurer, Dr. Walter Dotson, Lebanon.

WALTER DOTSON,
Secretary.

COFFEE COUNTY.

At the meeting of the Coffee County Medical Society, held at Manchester on December 27, Dr. Robert Dossett was made President for 1917, while Dr. Charles Griffith was reelected Secretary and Dr. J. A. Mitchell was selected as delegate to the State Association. The next meeting of this society will be held at Tullahoma on the last Wednesday in January.

Dr. Griffith reports that the outlook for 1917 is good, and that he thinks every member of the Coffee County Medical Society will pay all dues, including the medical defense assessment, before the 15th of January. We hope they will, so that we may commend their example to some others of the county organizations. The Coffee County Medical Society is one of our "baby" societies—only about a year old, but lusty and vigorous.

OBION COUNTY.

The society met on December 12 at the City Hall in Union City. Considering the weather, there was a good attendance—about twelve in all. Out-of-town doctors are to be especially praised, as they made up about half of the number present.

A good paper on "Diphtheria" was read by Dr. Havener. After discussion of this subject, the following members were elected officers for 1917: President, J. B. Havener, of Troy; Vice President, H. W. Qualls; and Secretary-Treasurer, J. D. Carlton, of Union City.

The society desires to mention the appointment of its retiring President, Dr. Bond, to the superintendency of the Western Hospital for the

Insane, at Bolivar, Tenn. No better man, in the opinion of the profession and all others who know him, could have been named for the place.

J. D. CARLTON,
Secretary.

1917 OFFICERS FOR DYER COUNTY.

At the regular monthly meeting of the Dyer County Medical Society on December 7, 1916, the following officers were elected for 1917: President, Dr. J. H. Green, Trimble; Vice President, Dr. R. L. Motley, Dyersburg; Secretary-Treasurer, Dr. E. LeRoy Wilkins, Dyersburg; Censor, Dr. D. L. Flanary, Dyersburg.

The Dyer County Medical Society was one of the strongest organizations in the state in 1916, and Dr. Wilkins encourages us to look for an even better membership in 1917.

The Nashville Academy of Medicine and Davidson County Medical Society held its annual election on the evening of January 3, the following officers having been chosen at that time: President, Dr. R. L. Jones; Vice President, Dr. Howard King; Secretary-Treasurer, Dr. E. M. Fuqua; delegates to State Association—Drs. Tigert, McCabe, Dixon, and Robert Caldwell; alternates—Drs. Kennon, Orr, Williamson, and Tharp.

After the election of officers, a banquet was spread at the Tulane Hotel and a general good time was had. Four speeches were made after the food was gone—exclusive of the deliverances of the toastmaster; and everybody agreed that none worse had ever been heard—including the deliverances of the toastmaster.

CHATTANOOGA AND HAMILTON COUNTY.

The Chattanooga Academy of Medicine and Hamilton County Medical Society held its annual election on December 1, 1916, and chose the following officers for 1917: President, Dr. H. L. Fancher; Vice President, Dr. John B. Steele; Secretary-Treasurer, Dr. H. P. Larimore; Censor, for three years, Dr. R. B. Wise. Dr. Larimore and Dr. Wise were reelected, each of them having served with distinction in their same po-

sitions for several years. The Hamilton County Society is in good shape, and, with the "hustlers" who are in charge of affairs for 1916 at work, this next year should be an exceptionally good year.

MEMPHIS AND SHELBY COUNTY MEDICAL SOCIETY.

At the annual banquet of the Memphis and Shelby County Medical Society, held at the Hotel Chisca in December, 1917 officers were elected. Dr. W. Britt Burns was chosen President; Dr. W. F. Clary, Vice President; Dr. R. H. Miller, Secretary; and Dr. Battle Malone, Censor.

SMITH COUNTY.

We have found, after three years of association, that when there is anything to do, Secretary Dr. B. J. High, of the Smith County Medical Society, does it. Consequently when January 1 came, his 1917 report came with it, showing sixteen members paid up for the new year. Dr. High reports that the Smith County Society has done good work during the last year, and that the attendance has been fine.

QUININE INJECTION.

By taking proper precautions the number of cases of abscess formation and necrosis from the injection of quinine may be greatly reduced, but the danger of their occurrence cannot be entirely eliminated. For this reason all authorities agree that the administration of quinine by injection should be confined to the most urgent cases of pernicious malaria. The two most important precautions are that the injection must be intramuscular and that the solution should be dilute—not stronger than ten per cent. The best salts are quinine dihydrochloride and quinine and urea hydrochloride.—*Journal of American Medical Association*, December 30, 1916, page 2030.

It is dangerous to put anything into the mouth except food and drink.

Sanitary instruction is even more important than sanitary legislation.

BOOK REVIEWS

INTERNATIONAL CLINICS. Vol. IV. Twenty-sixth Series. J. B. Lippincott Company, Philadelphia.

A wide range of subjects is covered in this number of this widely read publication, the contributors being distinguished men from the United States, England, France, and Russia. This is the Index Number of the 1916 series.

THE CLINICS OF JOHN B. MURPHY. December, 1916. Edited by P. G. Skillern, Jr., M.D. W. B. Saunders Company, Philadelphia.

"This book must be suspended, because its soul is gone."

This is the last number of Murphy's Clinics, which was begun in 1912 and which has gone out through the surgical world every second month since that time to carry the teachings of the great surgeon to hundreds of scientific men who *waited* for its coming.

Though this last number has much of the usual splendid scientific material to be found in any number of the Clinics, its chief value to most readers will be found in the surgical biography and in the splendid tributes to

Murphy from world-famous cotemporaries. Who in medicine delights to honor success and who regrets the passing of a master must want to have and to keep this last number of this last volume of Murphy's Clinics.

BLOOD PRESSURE. From the Clinical Standpoint. By Francis Ashley Faught, M.D., formerly Instructor in Medicine at the Medico-Chirurgical College of Philadelphia. Second edition. W. B. Saunders Company, Philadelphia. Cloth, \$3.25.

This volume sets forth in a clear, concise manner the important known facts concerning blood pressure. The author has added to his own extensive work numerous references to the results of investigations of others. The chapters devoted to a discussion of the circulation and its relation to blood pressure, the instruments and technic employed in making observations, are well arranged and deserve especial consideration by students and practitioners alike. Much space has been well given to discussion of the relation of blood pressure to the various medical and surgical conditions other than cardiovenal. Therapy and management of abnormal blood pressures are fully presented, and the text is enhanced by numerous graphic charts and cuts.

J. M. L.

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X-ray Diagnosis. Heliotherapy Modified after Method of Rollier.

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CONSERVATION OF OVARIAN INFLUENCE.*

BY T. D. MCKINNEY, M.D.,
Nashville.

"Woman is woman by virtue of her ovaries"—a statement made by Virchow which seems no less true at present than in his day. However, it might now be changed, in view of present-day physiological facts, to, "Woman is woman by virtue of the internal secretions of her ovaries." All of the peculiarities of her body and all of the peculiarities of her mind—in fact, all of that group of characteristics known as "feminine attributes"—are developed and largely maintained, throughout the life of the individual, through the influence of the internal secretions of the ovaries. In the literature which I have read within recent years there seems to be too little attention given the question of conservation of these important organs, and certainly during my experience and observation I have noticed among the great majority of operators whose work I have seen a very marked tendency to remove too many ovaries. Oöphorectomy, as practiced by Battey not many years ago for the relief of certain nervous conditions in women whose ovaries were perfectly normal, is not done at present—intentionally, at least—in women under forty years of age, showing that improvement has been made in the direction of conservation. Still, I feel that we are not far enough away from the old Battey era yet. My opinion on this question is based largely on the results of gross and microscopic examinations of ovaries removed at operations and sent to the pathological laboratory.

This lack of conservation is due, I think, primarily to the fact that we have not yet learned how to grossly differentiate the pathological and nonpathological ovaries at operation; secondly, to a lack of appreciation of the importance of their internal secretion; and, thirdly, to not closely following up the cases of oöphorectomy. The surgeon often sees little of a large proportion of his cases after operation. The practitioner sees more of the results, and often in these cases has to contend with these cripples the balance of their lives in a futile attempt to react them from a state of "chronic surgical shock."

That the ovaries furnish an internal secretion is now an established fact, being conceded by all authorities. Just what specific portion or structure in the ovary furnishes this secretion remains yet unsettled. It is impossible in a paper of this length to give more than a brief outline of some of the views and theories regarding the origin and action of this secretion, the importance of which I wish particularly to stress in this paper. It will be necessary to mention first something of the origin and morphology of the ovary.

The more recent investigation seems to indicate that the earliest cells of the ovary exist from the earliest stages of the segmentation of the ovum and have become segregated on the mesial aspect of the Wolffian body by migration through the mesentery. They appear about the fifth week of foetal life. The older view was that they were formed by a metaplasia of the mesothelium already existing in this region. These primary cells become structurally connected with their host by formation and ingrowth of blood vessels, nerves, and less differentiated somatic cells, becoming bound together in a mass or viscus. At this stage there is no recognizable differentiation of sex. John G. Clark's work shows that the earliest appreciable indication of sex is in the differ-

*Read at the meeting of the Middle Tennessee Medical Association at Franklin, November, 1916.

ence in the blood supply to the organ. These primitive cells multiply rapidly, some differentiating into the so-called "germinal epithelium," the function of which is mainly protective. The remaining cells, by ingrowths of connective tissue and blood vessels from the hilum, become arranged into columns or cords, known as "Pflüger's columns." These cords are at first solid, but later become tubular and sacculated, constituting the parenchyma of the organ. In the testicle these tubules grow downward and connect with the Wolffian duct. In the ovary this connection is not effected, and it remains in the strictest sense a ductless gland. From the primitive germ cells all the parenchyma of the ovary is developed—the ova, follicle cells, and many interstitial cells scattered throughout the stroma. The cells destined to become the ova increase in size rapidly and undergo changes in the distribution of the chromatin in its nucleus. Distinct follicle formation begins about the fourth month in the deeper, more vascular portion of the ovary. Serial sections show the follicles to be dilatations of the Pflüger's columns above mentioned. In the testicle these tubules produce the spermatoocytes.

It is estimated that the number of ova at birth is near one hundred thousand, all having undergone these phases of maturation with the surrounding rapid-cell mitosis and metabolism, the whole process being one of the most pronounced cellular activity in the life history of the ovary. During this great activity of the ovary, sexual characters become definitely determined. For this reason some authorities believe an internal secretion exists even now, since after birth, when the ovary is comparatively quiescent, such a hormone or secretion is generally admitted, and since at puberty the secondary sexual characters depend on increased activity of the ovary and on internal secretion.

After birth no one doubts the existence of an internal secretion, and all agree that it comes from the parenchyma of the organ. But at this point authorities divide, some believing, as a result of their experimentation, that its source is from the follicle apparatus; others, the "interstitial glands" (so called), which exist only as scattered cells in the human ovary, but are plainly marked as cell groups in some animals, as the cat, guinea pig, etc. Others believe the corpus luteum to play the greater part during sexual life.

This secretion acts on general metabolism, and controls especially nutrition, growth, and activity of the uterus. The quality or the quantity of the secretion varies at different times, and, when most abundant, brings about growth and hyperemia of the uterus or menstruation. This periodic increase in activity is generally attributed to the lutein cells of the corpus luteum, which develops from the lining layer of the follicle after its rupture. The influence of this body seems to prepare the uterus for the ovum; and if nidation occurs, this body and its secretion persist and maintain the growth and nutrition of the placenta until it reaches maturity. The retrogressive and fibrotic changes which the placenta undergoes during the latter months of pregnancy correspond to the disappearance of the lutein cells.

The chemical nature of these active substances is not yet known. The corpus luteum contains certain luteins, amorphous and crystalline pigments, but they are not peculiar to the ovary. Certain ferments and lipoid substances have been found, but these are not peculiar to the ovary. The great difficulty of working out this problem seems to be the close chemical and physiologic interrelationship now known to exist between the secretions of all ductless glands. The whole chain is so interdependent that a vast amount of experimentation and research will be required to clear these questions and give us light on this complex subject. The loss of function of one of this chain permanently disturbs or upsets the equilibrium of all.

The loss of the ovary means loss of sex influence and the grave disturbances of metabolism which this loss signifies, so that the importance of this sex organ can hardly be overestimated. Though its removal does not mean the loss of life, it is in a sense one of the most important of the whole body; for not only is it the primary organ concerned in reproduction, but it also regulates and controls the complete attainment of development, growth, and function of the individual herself, so perfecting its own generation, while at the same time it prepares for the next. Supreme individuality is only attained through its influence, and without it this attainment is never reached and the individual is imperfect and incomplete. A fact too often forgotten is that its continual presence is essential to the maintenance of this individual or sex perfection, and its removal or disablement even after ma-

urity is reached leads inevitably to descent and retrogression. From this we can better understand sex as sex influence—an influence exerted chiefly by the sexual glands; not a single definite impress stamped at the beginning on the ovum or embryo, but a continuous influence exerted by this gland throughout the entire life of the individual.

By ovarian transplantation we may attempt to restore lost or impaired ovarian influence. This procedure has been so successfully carried out that conception followed it in one case reported by Morris, of New York. This ovary was transplanted from one individual to another—heteroplastic transplantation. Uniformly favorable reports come from men who have done homoplastic transplantation. In accepting Morris' case, we must take into consideration the possibility of accessory ovaries or incomplete removal of all ovarian tissue, as cases of pregnancy are reported following double oöphorectomy. I will quote in abstract the conclusions of Martin in a recent review of the question of ovarian transplantation: "The procedure is simple and practical, and can be successfully carried out by any surgeon of ordinary ability and training. The ovary must be planted in a well-nourished tissue; only small pieces may be sufficient. Homoplastic cases are much more successful than heteroplastic on account of an individual specificity of tissue and blood. This may later be obviated by means of some process of preparation of the blood of the recipient and donor." In homoplastic transplantation, however, there are only a few cases in which the ovary or a portion of it is healthy enough to be removed and engrafted and is not healthy enough to leave alone.

We have attempted to maintain ovarian influence by organotherapy, the beginning of which dates back to 1889, when Brown-Sequard demonstrated the action of testicular extract. The ancients, however, gave fresh testicles of the fox, liver of the wolf, and lungs of the deer to confer upon the recipient the characteristics of these animals. Various extracts of the ovary and corpus luteum have recently been popularized as substitutes in ovarian hypofunction and after loss of the organ. Good results are generally reported in a fair percentage of cases, and in a small per cent the results are almost miraculous. Bad effects are rarely seen. Burman, of Baltimore, reports a high percentage of good results from

its use in cases of ovarian hypofunction and following ovariectomies. I believe this field of therapy offers much when we have learned more of the nature of the active principle of these organs and better methods of extraction, preparation, dosage, etc.

The natural and proper conservation of the ovary, however, consists in leaving it alone. I think we cannot too strongly insist upon this, especially in women who have not reached the menopause. Malignancy, of course, stands in a class by itself. It more often affects both ovaries; but, fortunately, it occurs more frequently in middle and old age, when destruction is not so disastrous. In innocent growths the opposite ovary is to be relied upon. Where both are involved by innocent growths, a portion of one can nearly always be left.

Infections constitute the great number of cases of ovarian surgery. Here each case must be considered separately. It is in these cases that too often the determining factor is the habit of the operator. Here I think we should bear in mind that ovaries involved in the inflammatory process may resolute and return to normal, or as nearly so as other organs of the body do. In acute and subacute inflammatory processes they should practically always be left in. Of course the acute case is rarely operated upon, except in instances of mistaken diagnoses. The subacute stage includes the greater number of so-called "chronic pus-tube" cases which are cause for the great majority of operations in the pelvis for inflammatory conditions and removal often of both ovaries. Sections of many of these ovaries appear absolutely normal, except for possibly slight exudate on the surface. The condition of "fibrocystic" or "sclerotic" ovary is a common cause for their removal. Cyst formation and scar-tissue development are natural processes in these organs. Each month several follicles may develop almost to the point of rupture; but usually only one ruptures, the others undergoing atresia, with absorption of the ovum and quite often retention of fluid; so that multiple simple cyst formation could almost be considered a normal physiological process in the ovary. The same is true of the fibrous tissue replacement of the ruptured follicle each month. In some cases these processes may be exaggerated to the point of being pathological, but often these conditions are simply the results of wear and tear of ovulation.

It seems that resection of the more cystic and fibrotic portions should be the method of dealing with these conditions. Here microscopic sections usually show distinct evidences of functionation. In dysmenorrhea the ovaries are rarely at fault; it is usually the uterus. In extreme cases, better remove the uterus and leave the ovary.

Unfortunately, conservation is most often practiced in the young women, where the same apparent pathology is so much more apt to mean actual pathology, which should be removed. This fact may often account for some of the bad results coming from its practice. I realize that conservative surgery of the ovary is still in its developmental stage; and as the more of this work is done and studied from a pathological and physiological standpoint and remote results recorded, we shall be able to determine more accurately its limitations and be able to say in what conditions it is indicated and in what conditions it is not advisable.

A PLEA FOR THE EARLY RECOGNITION AND TREATMENT OF HYPERTHYROIDISM.*

BY J. A. CRISLER, M.D., and E. J. JOHNSON, M.D.,
Memphis.

Goiters, like appendicitis, are generally first seen by the patient's family physician, and it is upon his advice that the case rests. The responsibility also rests upon him, as does all of the multiplicity of human ills and ailments. He is a kaleidoscope compared with the members of all other professions. He must know at once what ails the infant born with a tumor in its pyloric outlet, and be able to tell why all of the milk taken into the stomach is ejected, and to explain the complex symptomatology of inanition. He must be able, in fact, to answer at once for all the symptoms of disease which is common throughout the seven ages of man. He must recognize all the precancerous stages that affect all parts of the human body, and, in the remoter sections of our country, he is supposed to make the baby cut its teeth, as well as to pull the teeth of his patrons. Many times he is called upon to

not alone officiate at the death bedside, but at the graveside as well. He is dentist, priest, and preacher, and a Doctor Complex, who must know all things and know them well. He is everything but a specialist; but, in truth, he is a specialist in everything.

The title of this paper had best been called "A Message to the Family Doctor Concerning Goiters;" and what we have to say will concern only the family doctor, in a material sense, and, at least, it will help to lighten his responsibilities concerning goiters, if, indeed, it does not lighten his burdens. It is our aim, therefore, to simplify the subject of goiters for his benefit, his criticism, and his consideration only.

So much has been written concerning goiter and its various phases during the past five years until the specialist alone is barely capable of encompassing the never-ending and ever-enlarging subject, because of the frequent changes and great variance and different angles of observation taken by numerous writers. The situation may have been clarified to the satisfaction of the surgeon specialist, "but the waters have been hopelessly muddled" in so far as the busy, general country practitioner is concerned. Ever since the disease became a recognized pathological entity by Parry, Graves, and Von Basedow, other writers have followed with their ever-changing views, until the present chaotic spectacle has been brought face to face with the general practitioner. He has been led to believe that all goiters are dangerous surgical risks, and that operations done for their relief are most hazardous undertakings. Both of these propositions are utterly false. On the contrary, almost all goiters are good surgical risks, and in opportune cases there should be practically no mortality. If this is true, where should the responsibility rest? It should surely rest upon the surgeon specialist, whose duty it should be to pass judgment upon all goiters first and finally. Those cases that show an active or a beginning or even a potential hyperthyroidism should remain in the hands of the surgeon, for there is no curative medical treatment for them.

Instead of classifying goiters, as it is now almost correctly done in the large surgical centers, for the benefit of pathologists and surgeons, permit us to offer the following classification for the benefit of the general practitioner:

Goiters are of two kinds—simple and serious.

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

The simple kind is seen in young girls merging into active menstrual life and in pregnant women. All of the others are the serious kind—that is to say, they are either potentially or actually serious. The least harmful of the serious class are probably the large, knotty, soft, adenomatous, colloid, and cystic types; and even in these types, whose greatest evil may appear to be only in the deformity presented and in certain pressure symptoms, cancer is not an infrequent invader, on the one hand, while, on the other hand, a profound thyrotoxicosis may intervene without much warning and do irreparable damage. All goiters designated above as “serious” are at once strictly surgical and are never medical.

The X-ray man will dispute this, and here and there some practitioner will bring himself to believe that he has cured goiters of this class with certain forms of drugs. It is within the range of probability that some goiters have disappeared with or without drugs. This is especially true when the simple thyroenlargements are in very young women and in pregnant women. In the use of X-ray treatment of goiter much is yet to be learned. Many disastrous results have occurred, however, from this form of treatment. Especially is this true in cases where the entire thyroid gland has ceased to functionate and a condition of myxædema ensued, which has rendered the patient's last state worse than the first. That X ray has been successfully used to temporarily stop the ravages of hyperthyroidism cannot be disputed, but an invariable return of all the symptoms within a year or two has been reported from the greater surgical centers. The serums have certainly been a failure.

The recognition of a beginning hyperthyroidism is in many cases a most difficult problem and a particularly serious one, because we must remember that the damages wrought by hyperthyroidism frequently occur before the presence of thyroenlargement. We should put behind us all the classical symptoms and signs of Graves' disease except tachycardia and tremor. We, for the present, should forget Stellwag's sign and Von Graefes' and all the others, including especially exophthalmos, or bulging of the eyes. This is a signboard whose finger points to danger—not the danger that is to come, but what has been and is. When exophthalmos occurs, the heart and kidneys and many other important organs have been more or less permanently crippled.

The word “exophthalmic” goiter should be stricken from the vocabulary, for it does not express a diagnosis. It is a signboard by which we read the words “lack of early diagnosis,” and is a distinct reflection upon the medical adviser in any case.

In so short a paper we will have to pass on to our subject, “Hyperthyroidism,” or hypersecretion, or thyrotoxicosis, or acute malignant goiters, or whatever name you wish to give a condition wherein the thyroid gland has become more or less suddenly active, throwing an unusual amount of its secretion into the system, which, in turn, leads to, first, a rapid pulse rate, then nervousness and tremor and muscular weakness, and, later on, concurrent with these symptoms, a thyroenlargement of one or both lobes. And then come your various signs and symptoms, which may or may not include exophthalmos, before the patient dies. Let us say, for an example, that you see a patient, man or woman (most frequently women), with a pulse running around 120, with little or no temperature, with no dyspnea nor valvular heart lesions, with or without thyroenlargement. The very first thing to suspect is beginning hyperthyroidism. If this case is watched, in a few days we may have the tremor and nervousness, sleeplessness, excitability, indigestion, muscular weakness, perhaps sweating, and even in some cases diarrhea. With these symptoms present, and in many cases these are practically all the symptoms you will see, the case is already well on the road toward destruction of vital organs; and unless something is done quickly and positively, enlargement and dilatation of the heart, serious kidney and liver changes, together with changes in some or all of the ductless glands, especially the thymus and suprarenals, may rapidly take place.

The treatment at once in such conditions is, first, surgical. If too many serious lesions have occurred as the result of the toxemia, absolute rest and then surgical treatment should be instituted. We have no more justification to dally with these cases than we have to relegate cases of gangrenous appendicitis to medical treatment. Variations from this rule spell criminal neglect and malpractice, all of which mark the charlatan and the quack, under which category no clean, honorable doctor desires to be assigned. Except in cancerous and sarcomatous thyroids and those situated deeply behind the breast bone, the

actual surgical technic is as simple and as easy as that of any other everyday operation. In hyperthyroidism, however, with a crippled heart and concomitant derangements in every other organ from the toes to the brain, the matter of surgery in such advanced cases becomes more of a question of judgment than one of technic. Prolonged rest is advisable, on the one hand, while, on the other, the toxins are putting in their deadly and irreparable work. So this is a question to be settled, although it is generally settled in favor of the period of rest rather than an immediate surgical operation, which the patient perhaps could not withstand.

We will not go deeply into the matter of surgical technic, except to say that in many of these advanced cases we sometimes tie one or the other thyroid arteries, usually the superior, and wait a week or ten days and tie the other one; and then when the secretion has been thus minimized and the patient's physical condition, including the heart's action, has been benefited, the operation of removal of the affected lobe can be safely attempted. For our own part, we do all this work under a mixed form of anæsthesia—that is to say, we give the patient a hypodermic one hour before the operation which contains one-quarter grain morphine and one-hundredth of a grain of hyoscine. This “dopes” and obtunds the nervous sensibilities, so that we are now enabled to proceed with the operation by the free use of novocain, of which drug we use a two-per-cent solution.

We have operated upon quite a number of these advanced cases by this method, and we firmly believe that many of them could not have been carried safely through by any of the inhalation anæsthetics commonly used in the great surgical centers. It is true that it takes a little longer, which fact of itself will render this method unpopular. It is also true that it is much harder on the surgeon, because he is constantly alert to the slightest pain, and he must at all times be most respectful of tissues so as to handle them gently and tenderly. Otherwise the pain would arouse the patient and make the operation by this method impracticable. However, after all, it is the patient's life that we are trying to save, and our discomfort and hardship should not weigh heavily in the face of this.

In conclusion, let us again call your attention to the fact that a rapid heart action for which

no cause can be assigned is usually a forerunner of a violent hyperthyroidism. While nobody knows the cause of goiter, and while it may come from contaminated water, as has been shown by some localities where the disease was endemic, in many of these cases of hyperthyroidism you can trace the nervous element of shock or great mental anguish as a very strong predisposing factor which must be carefully considered. Again let us admonish the overworked general practitioner to observe these early symptoms carefully and conscientiously and not pass them by idly and as merely symptoms of hysteria, but to give them the closest scrutiny and focus upon them his wonderful diagnostic acumen. When this is done, life will be spared and health restored before permanent lesions upon important organs have been manifested.

ACUTE MIDDLE-EAR TROUBLES.*

BY WALTER DOTSON, M.D.,

Lebanon.

Acute middle-ear troubles are the ones that give the general practitioner and family physician the most concern, and are, perhaps, less understood by them than any of the acute troubles which they are so often called on to relieve.

The diagnosis we so often hear of being made is almost invariably “earache” or “risings in the head.”

The treatment prescribed for earache is laudanum and sweet oil poured into the ear, while that for “risings in the head” is hydrogen peroxide and water forced into the ear with a small syringe. Both of these treatments I want to condemn with all my powers of condemnation. They are not only useless, but are harmful, and the last named (peroxide and water forced into the ear with a syringe) is dangerous. These dangers will be discussed later on in this paper.

It is my purpose to here discuss acute middle-ear troubles in as simple, everyday, practical way as possible; therefore I shall only consider the two most common and important diseases of the middle ear. Both of these diseases are inflammatory and involve the mucous lining of the

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middle-ear cavity, and are, therefore, acute otitis media; but as the pathology, symptoms, and treatment are different, we will also draw a line of differential diagnosis between acute catarrhal otitis media and acute suppurative otitis media.

The drainage canal of the middle ear, which is also the air passage to it, is through the only natural opening connecting the middle-ear cavity with the outside world, the Eustachian tube. The one Eustachian tube to each ear opens into the nasopharynx on either side, behind and above the posterior pillar of the throat. So long as these Eustachian tubes are open, affording drainage to the contents of the middle-ear cavity and permitting the proper circulation of air through the tubes and tympanic cavity, and the nose and throat are normal, especially the nasopharynx, we will not have acute middle-ear troubles.

We know now that practically all acute middle-ear troubles have their beginning in the nose or throat or nasopharynx. The mucous membrane of the Eustachian tube, being continuous at its orifice with the mucous membrane of the nasopharynx, receives and transmits the inflammation starting in the nasopharynx along its canal to the cavity of the middle ear by continuity along the same continuous mucous membrane. This inflammation which starts in the throat and travels up through the Eustachian tubes varies in intensity and degree, as well as the various germs which produce it. It varies from the simplest form of a catarrhal inflammation which causes the mucous membrane of the tube to swell, closing its lumen, thereby preventing drainage of the tympanic cavity. This condition produces tinnitus, unnatural or "head" noises, decreased hearing, and a blocky or stuffy feeling in the ear, as if there were an obstruction in the external auditory canal. Should this simple catarrhal inflammation extend through the tube and involve the mucous membrane of the middle ear, causing it to swell and so decreasing the size of the cavity of the middle ear, and at the same time the amount of mucus and serum secreted by this membrane is increased and its drainage obstructed by the swelling of the mucous membrane of the Eustachian tube, then we have a plain and typical case of acute catarrhal otitis media, with an earache from this increased pressure. This pressure earache may be severe, as this excess of fluid in the tympanic cavity pressing

against the drumhead causes a bulging of the entire drum membrane. The cavity of the middle ear is decreased, due to the swelling of its mucous membrane; the secretion of the middle ear is increased, due to the inflammatory action; and the drainage of the middle ear is obstructed by the swollen mucous membrane in the lumen of the Eustachian tube. This causes pressure—sometimes extreme pressure—on the entire cavity of the middle ear, producing a bulging out of the drum membrane, which is the weakest part of the tympanic wall. This bulging out of the drum membrane is differentiated from the "pointing" of some place of the drum membrane in acute suppurative otitis media by noting that in the pressure form the entire membrane is bulged out. On close inspection with a good light we may be able to see the fluid in the middle ear through the drum membrane and to note the amount by its surface line. Change the position of the head and note the surface line change, or inflate the middle ear through the Eustachian catheter and note the air bubbles through the fluid in the middle ear by watching the ear while an assistant inflates the tympanic cavity.

Acute suppurative otitis media is produced in the same way as the catarrhal form, except that the inflammation is a septic or infectious inflammation and does not always travel up the mucous membrane of the Eustachian tube by continuity, but is more commonly forced direct through the lumen of the tube into the middle-ear cavity.

The cause of this is usually one of the acute infections of the throat. Naming the most common causes in the order of frequency of production, I would head the list with *adenoids*, and, next, diseased tonsils, and then follow with la grippe, measles, scarlet fever, pertussis, and diphtheria.

It was thought for a long time that one or the other of these infectious diseases was nearly always guilty, but we now know that adenoids and diseased tonsils cause many cases of otitis media where no other cause can be associated with them; and even when we have other causes, such as one of the acute infectious diseases, we can rarely eliminate adenoids and tonsils as a contributing factor, as they are usually present in children.

In naming the symptoms of either of the acute middle-ear troubles, *pain* is the first symptom.

Pain in the ear, called "earache," is the symptom that causes the patient to seek relief. Pain is the most prominent subjective symptom of both forms; but in the suppurative form the pain is more severe, lancinating, and will be described as a throbbing pain; while in the catarrhal form the pain is a heavy, dull, continuous pressure pain.

In the suppurative form the temperature will be elevated from 101 to 103, and the patients have the appearance of being very sick. They will give a history of having one of the acute infectious diseases, as tonsilitis or la grippe, preceding the ear trouble; while in the catarrhal form they usually give a history of an acute cold and sore throat preceding the pressure earache.

To differentiate between these two forms of acute otitis media, we take into consideration the history and duration of the preceding illness, the amount of the temperature, and the severity of the pain; but the dependence of correctly differentiating the two must be our own inspection, with a good light focused by a head mirror on the drum membrane.

TREATMENT.—The treatment can be named for both forms of acute otitis media with one word—*drainage*. While there are different methods of procuring drainage of the tympanic cavity, some method of drainage should *always* be done at once.

If we are sure that we are dealing with a case of acute catarrhal otitis media, we can secure drainage by one of three ways—viz.: (1) By incision through the drum membrane, (2) by applying medicated tampons to the drum membrane to produce an exosmosis of the liquid contents of the middle-ear cavity, and (3) by catheterization of the Eustachian tubes and forcing compressed air into the tympanic cavity to expel the liquid contents, or by alternating compression with suction through the catheter.

When the case is one of acute suppurative otitis media, or even when we are in doubt as to which form we have, then there is only one means of procuring proper drainage, and that is by a long, clean, curved incision through the drumhead.

I want to condemn a small or simple puncture of the drum membrane. Paracentesis of the drum membrane is not sufficient. It does not give ample drainage, and is neither safe nor sane surgery. The incision should begin at the up-

per part of the bulging point and be curved through it down to the lowest point of the membrane, cutting down into the cartilaginous ring of its insertion. After making a free incision, I insert a gauze wick drain into the incision and fold this loosely (not pack it) in the external auditory canal, leaving the other free end on the outside of the canal, and the dressing is completed by a pad of absorbent cotton. This cotton pad can be changed by the patient as often as it becomes soiled. I remove the wick drain, wipe the ear clean, and replace with a new wick every twenty-four to forty-eight hours, according to the amount of drainage and temperature and pain. By this incision and drainage method we can cure, I believe, ninety to ninety-five per cent of cases without doing a mastoid operation.

Drainage by incision should be made early and free, not only for the relief of pain and pressure and to empty the tympanic cavity of its purulent contents, but to prevent, if possible, an acute mastoiditis, which, as we all know, is a very common complication of acute otitis media. We can also drain the mastoid antrum, if it alone is involved in the acute mastoiditis, by a free incision through the drum membrane.

To permit a child to suffer with acute suppurative otitis media until the pus has migrated into the mastoid antrum, producing an acute mastoiditis, without an effort at drainage, I believe, is criminal neglect. To permit or encourage, by delay and poultices, the drum membrane to "break" itself should also be considered criminal negligence.

Nature rarely does a good job opening a drum membrane, as the perforation is usually small, round, triangular, or irregular in shape, and is commonly located centrally or high in the membrane. True, when the perforation occurs the patient becomes easy and quiet, as the pain and pressure are relieved temporarily, and the patient believes himself well; but after a short time, if the opening is small and located very high, the pain, with all other symptoms, returns, perhaps greater than at first, with accompanying mastoiditis. But should the perforation be large and more central in location, the case will continue, with partial drainage and with enough residual pus to become chronic, with all its attendant dangers and complications. For this class of neglected cases which are permitted to "break"

themselves to get well is the exception and not the rule.

I want to condemn the use of laudanum and sweet oil in the ear, as the laudanum colors and "gums up" the drum membrane, thereby preventing a natural inspection of the field and rendering a correct diagnosis more difficult. I also want to condemn the indiscriminate use of hydrogen peroxide in an ear that is discharging pus. The fluid peroxide will gravitate through the perforation in the drum membrane; and as it comes in contact with pus in the middle-ear cavity, gas will be formed faster in this cavity than the small perforation will permit its escape, and its dissecting capacity will sometimes take it through into the mastoid antrum, carrying purulent material with it, and produce a good, ripe mastoid abscess.

The treatment of no case is complete until the principal cause has been thoroughly removed; and as we find adenoids or diseased tonsils, or both, the greatest cause of acute middle-ear troubles, *always remove them completely.*

DISCUSSION ON THE PAPER OF DR. DOTSON.

DR. E. C. ELLETT, Memphis: I do not see why there should be all this bother about trying to differentiate between acute catarrhal and an acute purulent process of the middle ear. They are about the same. They give rise to pain, fever, or both, and are treated in the same way. They run the same course. One is as apt to get well without further trouble as the other. After narrating very fine points of distinction, Dr. Dotson stopped. He said that you tell the condition by looking at the drum. What do you see in the drum that will lead you to distinguish what is catarrhal and what is purulent?

I doubt very much if Dr. Dotson has ever succeeded in introducing a gauze drain through the opening in the drum. He may think he does; but I do not believe he really does that, and I do not believe he tries to do it. Many of these patients have an astonishing amount of acute middle-ear inflammation without pain. So often I think we are called to see an infant that is not big enough to complain, or often older children who do not complain at all. They just have elevation of temperature for which you cannot find the cause.

Some years ago I operated on a mastoid for the son of one of our physicians. The ear had run the ordinary course. The boy was taken with pain. Incision of the drum was done immediately on the same day. He proceeded to develop mastoid inflammation, and was operated on. About two days after the operation he developed a temperature of 103 degrees, and the temperature remained at that point for some time. His

hearing was not affected. You could speak to him and he would hear. He was a boy six or seven years of age, and never complained of pain. We went over him carefully two or three times every day, and the riddle was not solved until the other ear began to discharge. I had failed to examine the other ear because the boy had not complained and his hearing was not impaired; yet that was giving this temperature.

I find a good deal of comfort from the application of ten-per-cent solution of carbolic acid in glycerine for acute inflammation of the middle ear—that is, if the inflammation has not gone on very long and if there is not a very considerable bulging of the drum. Certainly, in the beginning I think a large number of cases under the influence of some such remedy as that will not go on to suppuration. The remedy should be combined with an external application of something hot, inflation preferably with a Politzer bag, and one full dose of opium. I have great confidence in that.

At the first meeting of the Tennessee State Medical Association I ever attended, which was a great many years ago, I heard Dr. Savage, in his usual enthusiastic manner, extol a mixture of olive oil and chloroform. You understand that "tinker's dam" is not a swear word; so I have no hesitation in saying that, in my experience, that is not worth a "tinker's dam," and I used it in accordance with the directions of Dr. Savage. The only application I have got much benefit from is carbolic acid and glycerine; and the best thing, if you do not get prompt recovery, is a free incision.

The bacteriologic aspect of this subject has interested me on several occasions, and I have come to the conclusion that it is wasting time to fool with a bacteriological examination of the discharge from the middle ear. I have seen bad cases that never contained anything but the staphylococcus, and I have seen the streptococcus mucosus in many cases in which the patient would go right along and get well without trouble. You cannot tell anything about the course that a case is likely to run in this part of the country from the bacteriological content. I know that in New York, when they find the streptococcus in these cases, they are very much alarmed; but that certainly does not apply to the cases we see down here.

DR. ALEXANDER B. DANCY, Jackson: I have listened to Dr. Dotson's paper with a good deal of interest. He has covered both the pathology and treatment very thoroughly. I want to call attention to one point especially. He mentioned in his paper doing paracentesis, making a free opening, carrying the line of incision below into the floor of the middle ear. I once had an experience which might be worth while to relate. The case I have in mind was a child eighteen months old, the little patient having a middle-ear abscess. I resorted to free paracentesis, carrying the line of incision well down into the floor, as suggested by the doctor, which was followed by a violent hemorrhage. In attending the clinics in one of the Eastern hospitals, I found out that there were several experiences of that kind in infants in doing a free paracentesis, and doing it rapidly. One doctor reported having such an accident while I

was in the hospital service, and an autopsy showed in that case an opening into the bulb of the jugular.

All of us have had a great many of these cases of middle-ear abscess this winter. I agree with Dr. Ellett that the bacteriological findings have very little to do with the outcome of most of our cases. I believe in doing paracentesis carefully; but as in young children the bony canal is not fully developed, especially in the very young, it is better to do the paracentesis upward, and do it as thoroughly as you can; but do not cut down on the floor of the middle ear.

The lack of pain in some of these cases—and I believe that is due to the patulous tube in the infants. I do not think they suffer much pain, as a rule, and the ear ruptures before they secure the services of the aurist.

DR. LEWIS M. SCOTT, Jellico: This subject is a very important one, and I think we should not pass it too lightly. I agree with the essayist as to the pernicious practice of dropping mixtures of oil and laudanum in the ear which are usually unsterilized. I also indorse the method of free incision of the bulging drum membrane for the relief of the pain and the establishing of free drainage of the tympanic cavity. In the case of an infant or young child, however, I would not perform this except under chloroform anæsthesia, as it is extremely painful.

Like Dr. Ellett, I question very seriously the fact that Dr. Dotson introduces the gauze drainage through the opening in the drum into the middle-ear cavity. I am inclined to believe that he only places it against the drum at the bottom of the auditory canal.

If the discharge continues for any length of time and the patient can be brought to the office, inflation by means of the compressed-air outfit, together with aspiration of the tympanum, is very effective. This should be followed with a saturated solution of boracic acid instilled into the cavity while the head is placed in position for gravitation. This procedure will often prevent an impending mastoiditis.

DR. EMMETT L. JONES, Cumberland, Md.: I do not want to tax the credulity of you gentlemen too much, but I cannot hold still after listening to a paper on this subject. When you take the methods of treating acute inflammations of the ear in all countries, if there is one thing in which there is a unanimity of agreement, it is with reference to how these inflammatory conditions of the ear should be treated; and yet I must say that for years and years I have been doing absolutely different, leaving out everything others are doing and doing altogether what others are not doing; and I have obtained results far superior to those I formerly had. When we get these cases before they are mastoid cases, they run their course, with little or no discharge or pain, and the ear is perfectly restored. There is no after discharge, no perforation or deafness in many cases even of mastoiditis, such as by rule urgently demand operation.

I have just released a patient who was sent to me for an immediate mastoid operation; and, according to the rules, that patient should have had an immediate mastoid operation. There was a high temperature; there was tenderness over the mastoid, etc.; but that patient

has gone home with perfect hearing, and never was touched with any sort of cutting instrument.

I have had numerous cases of abscess of the ear which ran their course without pain or appreciable discharge. The key to the whole thing is the treatment of the rhinopharynx. If any doctor wishes to try this plan of treatment, if he will write me, I will send to him a reprint of an article read before the American Medical Association which outlines the whole treatment in this class of cases.

DR. O. DULANEY, Dyersburg: We know that acute suppuration of the middle ear is one of the most frequent causes of deafness; and the old method of treating the condition with olive oil, with this, that, and the other thing, and with frequent irrigations of aqueous solutions, has been the cause of more cases of permanent deafness than any other thing in the world. Probably a lot of these cases would get well of themselves.

While I am on my feet, I wish to report an unusual case of an acute attack of iritis following an acute suppuration of the middle ear in a woman fifty-five years of age. The suppuration began suddenly without any pain. There was perforation of the drum. At no time was there a history of pain. The patient was referred to me by one of our near-by physicians, and it was found that the woman was paying no attention to the condition of her ear; yet she had one of the worst discharging ears I ever saw. She had iritis in both eyes. I could not get any results from atropine and medicinal treatment such as we use in cases of iritis until I went to work heroically to dry out the ear, and this was the only way I could relieve the iritic condition. After returning home, I advised her physician to wipe out her ear with a fifty-per-cent alcohol solution, it containing ten per cent iodine. After a little while she decided to quit having this done, and there was a return of the iritic condition with the suppurative condition of the ear, the discharge being quite profuse, positively proving it was of an infectious nature and the iritic condition being due to the ear itself.

In many of these acute conditions of the ear, where we think we have a mastoid complication, I find it is very necessary to keep an accurate leucocyte count. I recall having had a patient who was advised to have a mastoid operation. I made an examination one day and found a leucocyte count of 10,000, and the next day when the patient returned for operation another count showed that it had decreased down to 7,000. This was an acute case. Where we have decreased leucocytosis, the majority of the patients will get well; and I think that is an important thing for us to do in following up these acute middle-ear conditions and where we suspect mastoid involvement.

DR. CHARLES HUFF DAVIS, Knoxville: Paracentesis is preëminently the treatment for acute catarrhal or acute suppurative otitis media. Like Dr. Ellett, I have used twelve-per-cent carbolic acid in glycerine; but I have used it for relief of myringitis only. The glycerine dehydrates the tissues, and it is helped by osmosis to reduce internal ear pressure; and, besides the antiseptic properties of the carbolic acid, it is in this strength an an-

æsthetic, and naturally it relieves pain; but it is my belief that it is criminal negligence not to open the eardrum. The cause of this trouble, most often, is adenoids and enlarged tonsils, with the preference given in the order mentioned.

Nothing has been said about the after treatment locally, except that Dr. Dotson suggested sticking a wick of gauze in the puncture he had made, and Dr. Dulaney suggested wiping out the ears. But what are you going to do with the débris that is in the external canal? In wiping out the discharge, you are likely to push it up against the eardrum and dam up the drainage, and the pain increases. Personally, I use irrigations. I use hot permanganate solution, and I also use formalin in selected cases; but I especially recommend a hot solution of bicarbonate of soda, which dissolves the wicklike strands of secretion that get caught in the opening of the eardrum, the idea being that drainage should be constant. The hot-water bottle is good treatment, and dry heat produces resolution. This treatment is nothing in the world but as in an abscess, and should be treated along the line of abscesses elsewhere. I might mention heroic doses of mild chloride, and I also use urotropin with very satisfactory results. I do not believe this remedy has been mentioned.

DR. O. DULANEY, Dyersburg: With reference to the remarks made by Dr. Davis, I would like to say that in the particular case I mentioned I would not recommend that as a routine method.

DR. EDWIN L. ROBERTS, Nashville: Dr. Dotson did not cover the subject of middle-ear trouble as fully as his title would indicate; but his paper seems to be limited to acute catarrhal and suppurative conditions of the middle ear, and, consequently, I shall limit what I am going to say to the discussion of those conditions.

Of course we have an inflammatory condition there, and we may have pain from the inflammation, or the pain may be produced by pressure, and then it is necessary to get rid of that pressure. To get rid of the inflammation and the pressure, we must get rid of the excessive amount of fluid in the middle-ear cavity. As Dr. Ellett has said, it does not make much difference whether it is a catarrhal or suppurative condition that you have to deal with; yet the treatment might be somewhat different for the two conditions. Where we have a catarrhal condition, with a bulging drumhead, we want to get rid of the extreme pressure. I heartily indorse the carbolic acid and glycerine mixture, but I am a little afraid to make it as strong as that mentioned. In addition to glycerine, I use heat. I might mention a case in my own ear. I had a few years ago an extremely painful and disagreeable condition of this kind. I went home and filled my ear with glycerine, put a hot-water bag against the ear and kept it there for an hour, and, just like that [snapping the fingers], the whole condition was relieved. I felt a discharge in the pharynx, the Eustachian tube opened, and there was no more trouble. I do not know that I have had quite so sudden a collapse of pressure in any patient I have treated, but the glycerine treatment, with heat, is certainly a good one.

Dr. Davis spoke of irrigations, but I understood him

to say that he did not use irrigation until he made a paracentesis. Saturday afternoon I had a patient come into my office suffering with acute middle-ear trouble. The drumhead was standing away out. The pain was not severe, but there was a disagreeable tinnitus. I did not see any justification for doing a paracentesis on that drumhead at all. I began with hot applications and gradually applied them hotter and hotter, and told her to continue them as soon as she got home. She called again Sunday morning. The drumhead was almost normal in color and position. I told her to keep up the treatment.

I always watch these patients carefully. We should not let the drumhead rupture from the pressure within. We should do a paracentesis in time, but let us not do it until it is time.

DR. GEORGE H. PRICE, Nashville: If it were possible to tell which you have, an acute catarrhal otitis media or an acute suppurative otitis media, by mere inspection, you would be fortunate, as the treatment for the two conditions, while seemingly the same, is very different. The object of the treatment is exactly the same—namely, proper drainage. In acute otitis media you may have a retracted drum and very great pain. The drum is not highly colored. If you have a condition of acute otitis catarrhalis media, you would not necessarily incise the drumhead; for if you get the Eustachian canal open, as Dr. Roberts has pointed out, you will accomplish what nature tries to do. You need not make an opening in the drum membrane, as nature will drain through the Eustachian canal. If you have compressed air, if you simply nebulize the nose and posterior nasal cavities for some minutes with a good solution, in oil, of something that will sedate, and let them relax a little, you will get rid of it. You may then inflate and touch the nasopharynx with some depleting germicidal mixture. You can introduce glycerine into the ear. As a rule, I would not add carbolic acid. Carbolic acid is all right if you have myringitis; but if the pain is not in the drum membrane, carbolic acid does not do much good. If you have myringitis, carbolic acid will provide for and produce local anæsthesia, and that will help get rid of the myringitis. The pain that you get in the condition in which there is a stoppage of the Eustachian canal, as in every case of earache with a purulent condition in the middle ear, is due to an accumulation of products of infection, and not to adenoids. If you have a purulent inflammation of the middle ear plus a bulging drum membrane, and that can be determined largely by the extent of time the patient has been suffering, then you should establish drainage. It is not safe to undertake drainage through the Eustachian canal alone, but the thing to do is to make a free paracentesis. In order to do this, many anæsthetize the patient. I never do. The procedure I resort to is this: I instill into the ear a little of the suprarenal liquid, with chloretone, which is a general obtundent; then wash the ear out or simply dry it and instill into it a ten-per-cent solution of cocaine, with adrenalin chlorid; but this will not act well on the tissue where there is a great deal of inflammation. After this remains for about ten minutes, I then let it run out and dry. I

then use equal parts of cocaine, menthol, and carbolic acid, which, when combined, make a liquid. I take a cotton applicator, sharpened to about the thirty-second of an inch thick; on this make a small cotton tip with which to get a small drop of the above liquid; and, with the speculum in this position [indicating], apply this to the membrane in a line in which I desire to make the cut. I wait four or five minutes, and then incise. In most instances these patients do not really know when the incision is made.

DR. G. C. SAVAGE, Nashville: First, let me speak of the symptoms that an infant presents who has otitis media. It will now and then cry out with pain. In nursing, it will do so spasmodically, without letting go the nipple. In the spasmodic nursing which comes from bronchitis, when the child opens its mouth it lets go the nipple. There is always tenderness on pressure of the tragus in otitis media.

I have never advocated chloroform in olive oil except for earache, when there is beginning inflammation, to stop it short of suppuration. One dram of chloroform in seven drams of olive oil, ten drops at a time, put cold in the ear of a child, or, in the case of a grown person, the patient, with a folded towel over the ear, lying on the other side for thirty minutes, will afford relief from pain in such cases. It does no good when put in an ear that is already inflamed, with pus forming. I have always so stated. To warm this mixture destroys its power.

Relative to the opening of the drumhead, Dr. Price added one ingredient to his application that is not essential, it seems to me. I want to say that, so far as I know, Ellett is to be credited with the best agent for deadening the drum membrane so that it can be incised without any pain. It consists of equal quantities of cocaine and carbolic acid and menthol. You saturate a pledget of cotton and put it where you want to incise. It will turn the membrane white, and in two minutes you can make a painless incision. Do not cut the drum membrane until you have to; certainly do not cut until the membrane is bulging, and is bulging still more the next time you see it. Do not hurry in making a hole in the drumhead, because many cases can be cured without it.

The natural method of draining through the Eustachian tube is good and cures many cases.

There is a routine treatment on my part for these middle-ear troubles from the beginning. It is a combination of two methods of treatment, one of which I learned from Dr. Woodson, of Birmingham, Ala. I give him full credit for what he has done. Following Dr. Woodson, I give to adult patients every waking hour thirty drops of a mixture consisting of thirty-two drops of tincture of aconite, a dram of the tincture of opium, and enough sweet spirits of niter to make two ounces, until the fever is controlled. Then thirty drops is given every two hours until the patient is well. Smaller doses must be given to children.

Dr. Woodson does not want anything else but this internal medication in the treatment of acute internal middle-ear troubles, but there must be incision of the drum. My plan, added to the Woodson, which is part

of the combined plan, is to make a solution of atropine sulphate, one grain; morphine sulphate, four grains; boracic acid, twenty grains; and distilled water, one ounce. Ten drops of this, warmed, is dropped into the ear, the ear to be covered with a folded towel, while the drops remain for half an hour. I repeat this every four hours until the patient is well. When pus is discharging, I do not hesitate to cleanse the canal with dioxygen.

Of course, adenoids may be the cause of these ear troubles; but do not fool with the adenoids when the ear is acutely inflamed. Get the patient well of the acute inflammation of the ear before you attempt to deal with the adenoids.

Finally, influenza is one of the great causes of suppurative inflammation of the middle ear. The most remarkable thing about inflammation of the middle ear from influenza is the fact that, other than deafness, there are no symptoms until the ear is running. It does not take pus long to act on the drumhead tissue, break it down, and force its way out. There are many cases of painless inflammation of the middle ear in people suffering from influenza.

An eruptive fever (measles or scarlatina) is one of the causes of otitis media, and the ear trouble that attends such ought to be watched for. Every once in a while a patient suffering from eruptive fevers should be tested to see if the hearing is as good as it was.

If you cannot control the pain by the line of treatment which I have outlined already, you can help control it by the application of dry heat. I believe in dry heat more strongly than I do in irrigations of hot water.

DR. CHARLES HUFF DAVIS, Knoxville: The point that I want to make is that adenoids and enlarged tonsils are the open ulcers of the body, and have a great deal to do with the infective process, as well as with mechanical obstruction, when they are in a state of engorgement. They play an important part in infections of the middle ear. This is true in scarlet fever, in measles, and in influenza. All the lymphatic tissue in the nasopharynx closes it up, and the treatment of Dr. Jones consists largely in the mechanical reduction of that closure, and we get drainage through the Eustachian tube.

Dr. Roberts' treatment is fine, and I have tried it; but I still contend that where there is a bulging eardrum to deal with, caused by imprisoned gas, or by the serum of an acute catarrhal condition, or by the presence of pus, the drum should be opened immediately.

DR. EDWIN L. ROBERTS, Nashville: I look at the drumhead and decide whether I shall puncture it or resort to irrigation. I take the position that you cannot always tell whether there is pus in the ear or not. You can tell pretty well when the pus is coming by the color, and especially if it is anywhere near the surface. In the middle ear you have very little between you and the pus. The drum membrane is very thin, and it will begin to show evidences of necrosis and the kind of process that is going on inside very readily; so I maintain the position that I took at first—we are not justified in cutting into these eardrums too quickly.

I would like to say a word about the carbolic-acid

proposition. I would not feel entirely free to use carbolic acid strong enough to relieve pain by its local effect. I do not believe we should use it in that strength, because there is danger of causing far more necrosis of the skin than the pus which may be on the inside would cause.

DR. WALTER DOTSON, Lebanon (closing): I want to thank Dr. Davis in particular for saying what I intended to say about adenoids.

In regard to the use of glycerine and carbolic acid, I mentioned that in my paper; but I did not say why. I use a medicated soft tampon of glycerine, with ten-per-cent solution of carbolic acid, rolled from a pledget of cotton on the end of the applicator; then pull that off the applicator, dip it into ten-per-cent carbolic acid solution in glycerine, and carry that up against the drum membrane. I do that in cases in which I think I have to deal with a catarrhal otitis media; but let me insist again, if we have a suppurative otitis media to deal with, or even if we are in doubt, we should incise the drum membrane thoroughly and freely. We are dealing with an abscess here just the same as anywhere else in the body, except it is in a more important place than many other places, and a clean incision made with the surgeon's knife will heal quicker than if we allowed the drum membrane to rupture itself. We had better open the drum membrane in nine cases of otitis media unnecessarily than to let one go on to suppuration and rupture without opening. I remember some years ago during my training in a hospital in Chicago when it was common practice there to open drum membranes, and we were told to do so whether the patients had any suppurative middle-ear trouble or not. It does not do any harm.

So far as relieving pain in acute middle-ear trouble is concerned, nothing relieves it like the use of the knife. The use of the knife affords absolute relief.

As to what was said with reference to placing a wick of gauze, this wick of gauze we have made is about three millimeters in width. Under anæsthesia it is easy to make a clean incision, which enables you to get more room to introduce the end of the small wick through the incision. It is easier to do than to do an ossiculotomy or any of the other operations. Possibly I did not make myself clear regarding the point that in twenty-four or forty-eight hours I remove the wick of gauze and put back another one, carrying the end of it to the opening in the drum membrane. I fold it loosely in the ear canal.

DR. SCOTT: I understood you to say that you give a general anæsthesia when you put the wick of gauze in. You place it during the anæsthetic?

DR. DOTSON: I do about fifty per cent of cases under general anæsthesia and equally as many under local. If it is an adult, I do not give a general anæsthetic.

HEMOPTYSIS AND HEMATEMESIS IN TYPHOID, WITH REPORT OF CASE.*

BY CLINTON E. BRUSH, B.S., M.D.,

Nashville.

Judging from the statements of various authors, hemoptysis and hematemesis in typhoid are rare, and recovery in cases with hematemesis is still more rare.

Regarding hemoptysis, we find in French that slight hemoptysis sometimes takes place, and should excite suspicion of pulmonary infarction. According to Osler, hemoptysis may occur. Creagh reports a case in which it caused death. In Osler's "Modern Medicine" we read: "Hemoptysis may occur in the hemorrhagic type as part of the process. In a few patients small amounts of blood are brought up, most being probably due to an intense bronchitis. It may be due to an associated tuberculosis. It is possible that some cases are due to small hemorrhagic infarcts." Dieulafoy and Strümpell make no mention of the condition as a complication.

As to hematemesis, we find still less. French states that it is "rare." Osler, in his "Practice," says it occurred in four out of fifteen hundred cases, while in his "Modern Medicine" no mention is made of it. Dieulafoy states that it may be seen and, when a part of a hemorrhagic type, is always fatal.

In view of the rarity of these two conditions as complications of typhoid fever, I feel that I am justified in reporting in detail a case that came under my care. This is especially so because it appeared to be part of a hemorrhagic type of typhoid, and the patient, although desperately ill, made an ultimate recovery.

Patient: Miss H.; age, 28. Occupation, nurse in training. Admitted to hospital October 24, 1914.

Complaint: Fever and malaise.

Present illness: A definite date of onset could not be given. Since taking a course of prophylactic vaccine against typhoid, in May, 1914, the patient had not felt well. She had been able to continue her work, however, up to the day of admission to the hospital. There was no history of chills, nausea, vomiting, or bowel disturbance prior to her entrance to the hospital; but she had

A reliable disinfectant which may be made for fifty cents per gallon has been devised by the United States Public Health Service.

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

had an elevation of temperature for a month before admission, being 99.5 to 101 degrees whenever she took it.

Past history: Negative, except for measles and whooping cough in childhood, the latter at twelve years of age.

Family history: Father dead; age, fifty-six; mind impaired for several months before his death. Mother living and well. Three brothers living and well; no brothers dead; never had any sisters.

Physical examination: A well-nourished, rather nervous woman; face flushed, expression dull; pupils dilated and equal; tongue heavily coated and tremulous; pulse 100, rather weak; heart and lungs normal; abdomen distended slightly; spleen not palpable; a few suspicious rose spots on abdomen. Urine highly colored; sp. gr. 1026; strongly acid; no albumin; no sugar; no bile; diazo reaction positive. Blood, W. B. C. 8,400 Hb 84 per cent; Widal negative.

From the time that I first saw this patient it was evident that she had a very virulent infection. The temperature was not excessive, ranging from 101 to 104 degrees during the first week in bed. The pulse rate during the same time was from 100 to 120, and the respiration 20 to 24. Her general condition, however, was not good. She looked toxic. On the sixth day of her confinement to bed she became irrational. That same day, October 29, she had two attacks of epistaxis. Two days later she had an attack of epistaxis at 9 A.M., and an hemoptysis at 1 P.M. The hemoptysis was small in amount. The next day at about 3 A.M. there was another epistaxis, and at 4:30 P.M. another hemoptysis, larger than that of the preceding day and accompanied by a fall of temperature from 103 to 98.6 degrees. From then until November 4 there was no blood, and the temperature range was from 101 to 104 degrees, and pulse from 100 to 128. On this day there was a small amount of changed blood in the bowel movement. Two days later she had another hemoptysis at 9 A.M., and passed a large clot from the bowels at 5 P.M. Calcium lactate was used in doses of grs. xv. q. 4. h. On the next day, November 7, at about 10 P.M., she had a small hemorrhage from the bowels, and at 2 A.M. there was a large hemorrhage from the bowels, the temperature falling from 104 to 99.2 degrees and her pulse running from 120 to 130. At 9 A.M. she was given 10 c. c. of horse serum.

At 3 o'clock that afternoon she had another hemoptysis. Then for three days there was no sign of bleeding, and it was hoped that the horse serum had definitely checked the hemorrhage. But it was too early to draw conclusions, for at 9 P.M. on the 11th she had another large hemorrhage from the bowels, the temperature falling from 102.6 to 99.4 degrees. The following night she had an hemoptysis, followed by epistaxis in a few hours. The next morning she had another hemoptysis. At this time she also developed slight bleeding of the gums and a petechial rash appeared on the trunk. On the following day, November 14, she had an hemoptysis and epistaxis at 8 A.M., with a large hemoptysis at 8 P.M. Her pulse went up to 140, and ranged from 120 to 140 during the succeeding four days, with temperature ranging from 101 to 103.6 degrees. On the night of the 14th she received a dose of coagulose. On November 25th the temperature began to show marked daily remissions, and it was thought that there would be no more bleeding, as eleven days had passed with none other than a slight bleeding of the gums; but on November 28th she had a hematemesis, the temperature falling from 102.2 to 99.2 degrees. This was the only hematemesis during the course of the disease. The question naturally arose whether the blood came from the gums and was swallowed and then vomited, as it was changed blood. This, I thought, could be eliminated, because of the fact that she had been vomiting frequently during the preceding days, when her gums had also been bleeding, and there was not sufficient blood swallowed to be manifest in any of that vomitus. On December 1st there was another hemoptysis, and on that day her temperature touched normal. This was the last evidence of hemorrhage of any kind.

From December 1 until December 17 she ran the usual course of a patient convalescing from a very severe attack of typhoid, except that she complained of severe pain in her back. On the 17th she began to show definite mental disturbance, manifesting itself as a despondency and refusal to eat. Associated with this was a hypothermia, as is so often the case. The mental disturbance (which, of course, was a post-typhoid psychosis) continued during the balance of her stay at the hospital. Her appetite was poor, and she frequently refused all nourishment. She was taken away from the hospital on January 3, 1915,

mentally impaired, unable to walk, and with a typical typhoid spine, and went to her home in the country. For several weeks her mental condition showed little change, and then gradually improved. She was first able to walk in April—five months after defervescence. She was considered to be normal physically, but not quite normal mentally, in June—seven months after defervescence. That part of her history that occurred after she left the hospital is not based on personal observation, but on the statements of her brother. She returned to the hospital to complete her training in June; but, owing to her mental condition not being normal, we sent her away to be amid changed surroundings, with instructions to remain until well. She returned again in September, apparently normal.

This case presents a number of unusual features.

1. In a case of typhoid following prophylactic inoculation and coming on in less than six months after the inoculation was given. I did not give the inoculation; but was told that it was with typhoid vaccine alone, and not with the mixed typhoid and paratyphoid. Regardless of that, however, this is probably a case of true typhoid infection, because her blood never did give a positive agglutination with paratyphoid. An agglutination test made with the typhoid bacillus at the beginning of her illness and several subsequent ones were all negative. Toward the end of her illness, at the time when her temperature became normal, her blood gave a positive reaction with the typhoid bacillus. Therefore, this may be considered as a case of typhoidal infection developing five months after inoculation and well within the period of immunity that should result from the inoculation with the vaccine. Not only did the inoculation fail to prevent the incidence of the disease in this case, but also it probably did not influence the course. The infection could not have been more severe without a fatal ending, I believe. I do not wish it to be inferred from these remarks that I am a disbeliever in the value of the prophylactic immunization against typhoid. On the contrary, I am very strong in my confidence of its efficacy. My only explanation for its failure in this case is that the vaccine may have lacked potency, or this may be one of those individuals in whom it seems impossible to establish an immunity.

2. This was a case of hemorrhagic typhoid,

which is unusual; and the patient recovered, which is still more unusual.

3. It was featured by the tendency to hemorrhage from the lungs, there being eight definite hemoptyses. What caused these, I cannot say. There was no evidence of infarct formation. The only physical signs were those of a diffuse bronchitis, with no signs of localization. It can be said almost with certainty that they were not due to an associated tuberculosis, as is shown by the subsequent course of the case.

4. Hematemesis—a most unusual symptom—was also present. It occurred once.

5. Other evidences of the hemorrhagic type were the epistaxis, which occurred on numerous occasions before her admission and during her stay in the hospital; hemorrhage from the bowels, which occurred five times; bleeding from the gums; and a petechial eruption.

6. It was not apparent that horse serum or coagulose or the calcium salts had any effect upon the hemorrhagic tendency. Whether they would have done so if they had been administered earlier, I cannot say. It has long been my custom to administer calcium lactate in intermittent courses of dosage to my typhoid patients as a routine treatment in all cases without gastric irritability, hoping to be able to maintain a high coagulability of the blood. It has been my impression that with that line of treatment I have seen less evidence of hemorrhage than without it, but my cases have been too few in number to warrant the drawing of any definite conclusions. My reason for not giving this patient calcium from the beginning was that she had an irritable stomach, and there is no doubt that calcium will frequently induce vomiting, or aggravate that condition if already present. Adrenalin I never use for hemorrhage in typhoid, because it cannot possibly reach the bleeding point in sufficient concentration to exert a local effect; and there is the theoretical objection that the possibility of its checking hemorrhage by its systemic effect through vasoconstriction at the site of hemorrhage may be more than counterbalanced by the general rise in blood pressure caused by it, thereby tending to increase the flow of blood from the ruptured vessel. Furthermore, in these cases the bleeding is almost invariably from a hole in the side of the vessel, caused by the erosion of the ulcer, and not by complete severance of the vessel. The vasoconstriction produced by adrenalin

will have less effect in diminishing the orifice of an erosion through the wall of a vessel than it will in lessening the actual transverse diameter of a severed vessel.

7. There were two sequelæ—a typhoid spine and a post-typhoid psychosis—the typhoid spine persisting for three or four months and the psychosis for more than six months after leaving the hospital.

BONE AND TENDON TRANSFERENCE.*

BY J. P. BAIRD, M.D.,

Dyersburg.

The very rapid advance of surgical technic during the past few years, including more nearly perfected asepsis, the development of apparatus, devices, and instruments of precision, and the recognition of the necessity of applying these according to the exact and mechanical laws, has greatly improved the former results of operation, especially those dealing with bone and tendon work, and has widened out and opened up new fields, making possible many serviceable and life-saving results which until the present we never hoped to attain. With our constantly growing knowledge of physiology, laws governing the growth of cell life, transference, preservation and guidance of growing, reproducing tissue; and by the wonderful aid of the X-ray apparatus, mechanically perfect instruments, electrically driven motor saws, drills, shapers, and agents too numerous to mention; and by the operations of these with precise and careful mechanical ability, results are now obtained which are satisfactory and even surprising in nature.

The last qualification—namely, real mechanical ability, producing neat and perfect adjustment and proper alignment and coadaptation of the parts, assuring both cosmetic and functional results—is, if anything, one of the most necessary elements of success, and has been frequently underestimated, which has often been the cause of surgical failure.

And of equal, if not of more importance than any of the above-named requirements, is the after care and postoperative skill in handling

these cases in a manner which will produce the maximum of results.

These points are insisted on as most essential by the great leaders in this line of work, such as Cheyne and Lane, of London; Albee, of New York; and Murphy, of Chicago. This month's issue of "Murphy's Clinic" you will find almost entirely devoted to this line of work, with several interesting cases reported.

I will briefly mention a few points in the technic of tendon transference, as this work is so frequently closely connected with bone transference in certain cases, especially in the various forms of "talipes," or clubfoot. Here it is necessary, in severe cases, to obtain the best appearance and functional results, not only to change the shape and position of some of the bones, but to transfer the action of tendons of normal, live muscles to other tendons paralytic with loss of function, or to other bones or parts of the foot where the tendon action will be of more advantage than in its normal position. To get results in these cases requires careful consideration of the anatomy and physiology of the tendons and the exact action and power we hope to develop in the new location in which they are implanted.

A firm attachment must be secured at the new points of insertion of the tendon, or it will not stand the pull of the muscular contraction when the time comes for it to stand the test of practical use. This can be made secure by splitting the end of the tendon and inserting same through the side of the receiving tendon, or deeply burying it beneath the periosteum, if implanting on a bone, or even inserted through a drill hole in the bone and stitched to the opposite side, as we frequently do with the tendon of the tibialis anticus, putting it entirely through one of the tarsal bones, lifting up the bone, and firmly attaching tendon to the under surface, which is of much service in the correction of ordinary "flat-foot."

I will mention more of the technic of the transference later, during the exhibition of a few cases, and after I have devoted a few moments to the consideration of "bone graft results." Transplantation of this tissue has been practiced to a more or less limited degree for more than a hundred years in practice and experimentation on man and animals, including small pieces of bone, fragments of cartilage, whole bone ends with articular cartilage, and even an occasional transplant of a whole joint; but the practice had

*Read at the meeting of the West Tennessee Medical and Surgical Association at Jackson, May, 1916.

not become very extensive until the last few years, since faulty surgical technic has been almost eliminated, since which experimenters have been more bold to try out various procedures and have developed with their extensive practice



measures which are becoming of enormous benefit to afflicted mankind.

After considerable experimenting with grafts from animals and bones from other parties and with various methods of preserving bones for a period of time before transplanting, it has been found that the best results are obtained by the autogenous bone graft, or bone removed from the same patient and transplanted to its new bed soon after its separation from the parent bone. This method, which has been so perfectly developed by Albee and others of late, is so uniformly successful that it is being used in an almost unlimited number of conditions and is taking the place of other methods of bone repair, such as metal plates, screws, nails, and foreign materials in general, which have been used so extensively and with remarkable success by such men as Lane and John B. Murphy. But even applied with their science and ingenuity, all foreign material tends to cause absorption of the contiguous bone and becomes loose and useless. The substitution of the strip of bone for the metal plates and the bone peg for screws and nails is undoubtedly a great advance.

An absolutely aseptic field is, of course, to be desired for the best results; but the good results reported by Albee in tuberculous joints and in Potts' disease of the spine (numerous cases of

such being reported cured), and in even bridging mildly pyogenic cavities, shows that its usefulness is not entirely limited to aseptic cases.

A few of the uses possible when the conditions are favorable for bone transplants are in the deformities, congenital and acquired, in clubfoot, deficient or destroyed tarsal bones from tuberculosis, paralytic scoliosis, immobilization by inlay strips for the cure of tuberculosis in the various joints, or replacing of bone thereby destroyed, Potts' disease, fractures, either fresh or united, of various bones congenitally absent or bones destroyed by infection or malignancy, frequently recurring dislocations of relaxed joints, face, skull, or nose deficiencies, completion of maxillary arch in the harelip and cleft palates, flail joints of ankles and knees paralytic in origin, and in cases of spina bifida where bone is congenitally absent.

(Several of these deformities, with technic of correction and results, were demonstrated by lantern slides during the West Tennessee Medical Association meeting in Jackson; but, owing to the space being limited for illustrations, I will only insert pictures of two cases, with brief descriptions of same.)

Case 1 (A and B).—Spina bifida; male, age, seven years. The tumor was of the meningo-



myelocoe variety, which had grown from the size of a hen's egg at birth to be more than five inches in diameter at the time of operation, April 27, 1916. Operation was consented to at this time because of rapid growth during the last year and

extreme and progressive thinness of posterior tumor wall, with rupture and infection imminent.

Patient placed on face, hips elevated (as in



Kraskes' operation for exsecting rectum), with object of retaining a nearly normal amount of cerebro spinal fluid to prevent loss of tension in canal. Large semicircular skin flap elevated to prevent skin incision, on inclosure, from coming directly over opening in spine. Skin, fat, and muscles were then retracted and tumor sac carefully uncovered to its neck at emergence from spinal canal. Over a quart of fluid carefully withdrawn and portion of lateral surface of sac saved to cover canal. The opening in posterior wall of the bony canal measured about one inch laterally by two and a half inches horizontally, and the defect corresponded to the absent posterior arches of the last lumbar and first section of sacral vertebra. Several fibers of the cauda equina spread out through tumor and were attached in a line on posterior surface of its wall. These and a narrow strip of sac at point of attachment were carefully replaced in position in canal, lateral sac flaps sutured over, reinforced by dense fibrous flaps from either side of spine. The posterior layer of the canal covering was covered by a strip of bone transplant ($\frac{7}{8}$ inch by 3 inches) taken from the flat surface of the tibia and firmly attached by kangaroo tendon sutures to the thoroughly denuded surfaces of the spinous process above and below the canal defect. Bone graft

then covered by thick flaps of muscle, fat, and skin, sutured in position, and fixation apparatus applied to back and pelvis to maintain immobility of lower part of spine.

Wound healed at once, and patient made an uneventful recovery. X-ray three months later showed bone graft in position and function of spine perfect.

Incidentally same patient had double talipes equino-varus, trophic ulcers over lower limbs, and paralysis of bladder, all of which frequently accompany spina bifida.

The clubfeet were corrected three weeks after spinal bone graft by tenotomies, transference of bone wedge from outer to inner tarsus, and transference of insertion of tibialis anticus tendon from internal to external side of foot. Feet over-corrected and placed in casts. At present time the patient is walking without crutches, spine erect and in good condition, general health and nutrition better than before operation, trophic ulcers do not recur, and even a slight improvement in bladder control. Bone graft now palpable, in position, and no tendency to tumor reappearance or other complications after more than eight months have elapsed.

Case 2 (C and D).—Female; age, nineteen; infantile paralysis, right foot in position of



talipes equino varus, left foot completely limber at ankle joint from complete paralysis of all muscles of the leg, and left knee joint "flail."

The method of correction of the extreme backward flexion of knee is partly original, as far as I have been able to find out, and for that reason I will report the case. Doubting the possibility of getting a permanent beneficial result from the usual method of shortening posterior ligaments and tendons of the joint, I decided not only to do this, which I did as a preliminary step, before doing a bone graft in anterior portion of knee joint. This procedure seemed like taking some chance for producing an ankylosis; but considering that even preferable to the extremely relaxed and almost useless joint, we decided the experiment justifiable.

Laying bare over five inches of that portion of the flat, anterior surface of the tibia immediately below the joint and just internal to the tuberosity, all tissue was carefully separated from periosteum, so that a strip of bone an inch in width and nearly five inches long could be loosened with the aid of the Albee motor-driven saws. Before approaching the upper anterior margin of head of tibia, the bone was closely followed with a periosteal elevator separating periosteum, articular capsule, and joint cartilage freely from bone and without rupturing or entering the joint cavity. By separating the joint cartilage for some distance on either side of the proposed bone graft, I was enabled to force it upward some distance by the strip of loosened bone (1 by 4 inches), which was advanced upward about one-half inch and held in position by kangaroo tendons through several small drill holes in edges of bone. This half-inch projection upward of the bone strips, lifting up joint capsule and cartilage, together with the exostosis or callous formation naturally filling in around freshly cut bone surfaces, caused both an appreciable widening and elevation of the anterior margin of tibial head and serves as an efficient "bumper," or lock, preventing too much rotating backward. The wound was closed and limb put in splint for six weeks without testing. After this time the knee flexed normally, but on extension locked firmly in straight position. At present, after ten months' use, the knee has stood the test of walking, and functionates properly. This procedure in this case was entirely satisfactory, both to patient and surgeon.

Talipes of right foot was corrected in the usual manner; but left foot, being more of a flail joint and "drop foot," was corrected, or put in bet-

ter and more stable condition, by advancing a strip of bone ($\frac{3}{4}$ inch by $3\frac{1}{2}$ inches) downward through ankle joint from anterior plate of tibia into the body or anterior part of the astragalus. This, with shortening the relaxed tendons anterior to the joint, has proved beneficial for me in several cases, does not produce shortening of limb, and does complete "astragalectomy."

THE UROLOGIC ARMAMENTARIUM— ITS VALUE IN DIAGNOSIS, AND SOME OF ITS THERAPEUTIC APPLICATIONS.*

BY IRVING SIMONS, B.S., M.D.,
Nashville.

In taking up this subject, I intend merely to call your attention to some of the more recent urological procedures called into being chiefly by the desire of the modern cystoscopist to avoid the suprapubic cystotomy for vesical exploration, and made possible by the cystoscope and urethroscope, the addition to them of various operating features and the adaptation to them of the monopolar (Oudin) and bipolar (D'Arsonval) type of high-frequency current.

The development of the cystoscope, as such, reached a rather fixed point about 1909, when various cystoscopes were devised, which combined a brilliant lens system, having a corrected image, with double ureteral catheterization and simultaneous irrigation of the bladder. Having reached this stage of perfection in bladder examination and a study of accurately separated renal function, the instrument would have remained entirely a diagnostic and prognostic instrument, with the one exception of the therapeutic procedure of lavage of the renal pelvis, had it not been for the ingenuity of Edwin Beer, who conceived the idea of using the Oudin high-frequency current for the destruction of superfluous tissue in the bladder, notably for the destruction of bladder papillomata. This current was used chiefly because of its power of acting in a water medium, which, of course, was necessary for accurate cystoscopy, as cystoscopy in an air medium had never proved as satisfactory as had been hoped, and was especially unsatisfactory in the male bladder. However, it was found later that,

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as this type of cauterization did not develop much heat, it was not very painful, and in addition it had a specific action upon papillomata of the bladder, causing them to melt away far more extensively than the amount of fulguration done at a sitting would lead one to suspect would occur.

Having arrived at this point, Buerger next devised a cystoscope of ordinary size with an oval instead of a round sheath, and, eliminating his catheter channels, used this entire space for the passage of a potentially No. 12 (French) instrument. This gave him his opportunity for devising operating instruments, such as foreign-body forceps, punch forceps for removing tissue for diagnosis, scissors for ureteral meatotomy, ureteral dilators with olivary tips and a connection for D'Arsonval current, snare for pedunculated tumors, etc.

In discussing the various therapeutic procedures that are possible in the upper urinary tract—i. e., kidney and ureter—let us take up the following:

1. Lavage of the pelvis of the kidney and of the ureter with various antiseptic solutions I shall merely mention as one of the most strikingly efficacious of all that I have used, but shall reserve discussion of it for a future time, when it can be taken up more fully.

2. The facilitation of the passage of a ureteric stone. I have had the experience twice in the last eighteen months of catheterizing the ureters in stone suspects in whom the radiograph showed nothing. Both these men passed small stones within twenty-four hours. In only one man was any injection of the ureter made, and that was with collargol (10 per cent). In another case after pyelography, a subsequent radiograph showed that a stone had moved from the renal pelvis to the next narrow place in the ureter (the sacroiliac synchondrosis). A stone in this region should be treated by dilating the mouth of the ureter with the olive-pointed bougie, using a weak D'Arsonval current to gently relax the ureter. This, or the distension of the ureter with warm paraffin oil, may allow the stone to descend to the next narrow point, the part of the ureter that pierces the bladder wall. At this point the stone is usually marked by a massive edema, which is due to a prolapse of the ureteric mucous membrane. If the mouth of the ureter cannot be found, the edema may be relieved by puncturing the mass in a number of places with the high-

frequency wire and waiting a day or two. If the ureteric mouth becomes visible, ureteral meatotomy can be performed with the cystoscopic scissors, and also oil again injected. At times the stone can be seen peeping out and can be grasped with the foreign-body forceps and removed.

Should all these methods fail, suprapubic transcystic removal of the stone may be done if the stone is low down enough, or other methods used if the stone is higher up.

In the bladder itself a number of diagnostic and therapeutic procedures of worth are feasible:

1. Foreign bodies—such as small stones, bits of rubber catheter, etc.—can be removed through the cystoscope.

2. Excision of tissue. Buerger has been able to diagnose renal tuberculosis in early cases by punching out a bit of the edematous tissue at the suspected ureteric mouth. A section of this showed tuberculosis. Papillomata that are pedunculated can be snared off, as this saves time, and the pieces removed through the cystoscope with the foreign-body forceps.

3. Simple ulcer of the bladder. In a non-luetic case I have recently obtained results by going over the edges of the ulcer with the D'Arsonval current. When very callous, Buerger has advised and practiced excision with the punch forceps.

4. The treatment of benign tumors of the bladder (papillomata) with the high-frequency current needs no champion. It is almost specific, as mentioned above. At the last Urologic Section of the A. M. A., Beer claimed that if a tumor did not rapidly melt away after high-frequency treatment, it was probably malignant, and this sort of treatment should be desisted from. It should never be used in a carcinoma of the bladder. Its only disadvantage is that it requires frequent sittings, as only small amounts of tissue can be destroyed. Hence general papillomatosis requires open operation, and diathermy can then be done in the open bladder. Cysts of the bladder can be easily punctured and evacuated, but bullous edema should be avoided.

5. Other procedures possible in the bladder are: (a) The catheterization of the golf-hole ureters with large, stiff catheters (8-10 French). (b) The employment of three catheters at one time. (c) The division of stenosed ureteric orifices where symptoms are present.

URETHROSCOPES AND URETHROSCOPY.

As far as some of us are concerned, very little worth while can be seen with the ordinary anterior urethroscope, or endoscope, as it does not magnify, nor does it spread out the mucous membrane of the urethra. This is all the more so in the posterior endoscope, even where there is air distension, as most of the air goes back into the bladder. This problem has been solved by the water dilatation posterior urethroscope, of which good examples are Wossidlo's and McCarthy's. The advantages are great magnification, and consequently accurate detail due to the fact that the distending fluid balloons out the canal sufficiently to allow the operation of a good lens system. As diagnostic instruments these are valuable, as they allow accurate inspection of the vesical sphincter, especially that portion that leads to the supramontane region. Coming forward, we next come to the verumontanum, or seminal mound, with at times the visible openings of the utricle and the ejaculatory ducts, and in front of this the acclive leading to the "colle fibreuse," or membranous urethra. Up to this point the Wossidlo is superior, but the McCarthy can be used in the bulb and the anterior urethra.

URETHROSCOPIC THERAPY.

Of course cutting instruments can be used in the urethra, and occasionally one can extract a stone from the urethra with foreign-body forceps, but as a rule one can do all that is necessary with the high-frequency current. Just inside the bladder McCarthy has recently used his instrument with brilliant results. He destroyed with the current small enlargements of the middle lobe of the prostate in several men about fifty years of age who had a little residual urine. This recalls the old Bottini operation, without its horrors.

At the vesical neck I have been able to remove granulations and polypoid excrescences, and to relieve symptoms in cases that might have been termed vesical neuroses.

Further down, one of the commonest lesions in vesical neurosis and sexual neurasthenia is a condition of verumontanitis, in which excess granulation tissue is present on the seminal mound. The D'Arsonval current is here far more accurate and less painful than the brutal cauterization of this region with 25 per cent silver nitrate, with

its concomitant burns of the surrounding mucous membrane that needs no cauterization. In the anterior urethra, however, we find the most common lesions, as here in practically all chronic cases of gonorrhea there are in greater or less number residual infections of the glands of Littre or of Tyson or of the crypts of Morgagni. These can be cured only by electro cauterization, and D'Arsonvalization is very satisfactory.

In closing, I should like to stress these points:

In all obscure cases, before diagnosing neurosis of the bladder, impotence, neurasthenia, vesical irritability due to acid urine, etc., it is advisable to have a good survey of the entire urinary tract made—not merely a cystoscopy.

There are many cases with pathological lesions in the urinary tract that may not need an open operation, provided that the necessary judgment, skill, and instruments are at hand.

The treatment of chronic gonorrhea and its sequelæ is a question of instrumentation, rather than immunization or psychotherapy.

ACUTE INFECTIVE OSTEOMYELITIS.*

BY EDWARD T. NEWELL, B.S., M.D.,

Chattanooga.

Having just recently come under my observation two cases of the above-named condition, and having had several subacute cases of this trouble in the past year, I felt that a short paper on this subject might be interesting to this society to-night.

I know of no subject that demands more prompt and accurate diagnosis than acute osteomyelitis. It has been said that a gangrenous appendix will become fully so in forty-eight hours, and that if you are going to prevent gangrene in all of the threatened gangrenous appendices, you must operate before the forty-eight hours are up. It is even more important in acute osteomyelitis that you operate early; for if the infection in the medullary canal is extensive and virulent, the death of the entire bone has been known to take place in from eighteen to twenty-four hours. The only way to prevent this is by an early opening through the bone into the canal, releasing the pus that is under great tension, and consequently

*Read before the Chattanooga Academy of Medicine and the Knox County Medical Society, September, 1916.

is highly toxic to the entire system and destructive to the bone *per se*.

Acute osteomyelitis is an affection of the diaphysis of the bone in ninety-five per cent of cases. A great many physicians and some surgeons are of the erroneous opinion that it is an affection of the epiphysis. While it occurs in the majority of cases in young adults or children between the ages of ten and fourteen years, mostly in the male, it is not necessarily confined to childhood, and is frequently seen between the ages of twenty and thirty years. The bones most commonly affected in this trouble are the femur, humerus, tibia, and radius. It is said that the lower end of the shaft of the femur, the upper end of the shaft of the humerus, the lower end of the radius, and the upper end of the tibia are the most frequent sites of predilection for metastases to develop. This has not been my personal experience in regard to the tibia, as most of my cases have developed at the lower extremity of the shaft. Of course the flat bones and irregular bones, such as the os calcis, metacarpals, ribs, etc., are quite frequently affected.

It is more than passing strange that the connection with the primary focus of infection as the causative factor in acute osteomyelitis was so long overlooked. But, as Dr. Murphy so tersely puts it, this is not unexpected, as hundreds and thousands of autopsies were held during the last century for peritonitis, and the causative factor—the appendix—was overlooked, when it stood out so prominently as the cause. With the exception of the streptococcus, which sifts through the lymphatic glands so rapidly and enters the blood stream and metastasizes in the medullary canal or under the periosteum and in other organs and structures so rapidly, the other organisms that produce metastases do so at such great length of time that the etiology of the disease is easily overlooked.

However, at the present time we now know that the various organisms that cause acute osteomyelitis go through a definite cycle before they metastasize, and we know now just when to look for this disease following infection either in the tonsils, the teeth, or the skin. For instance, influenza metastasizes in from ten to twelve days, gonorrheal urethritis in from eighteen to twenty-two days, typhoid fever in from three to five weeks (just as the typhoid ulcer is beginning to heal), diphtheria just after the membrane comes

away. I may say here that staphylococcus pyogenes aureus heads the list as the causative factor in this disease.

Among the causes usually ascribed to acute osteomyelitis are exposure to cold and trauma. These are in a measure the exciting causes; but the real cause is the primary infection that took place some days, weeks, or months before the symptoms developed. A typical case of acute osteomyelitis begins with sudden pain near a joint. It is important that we examine the patient carefully and ascertain the point of greatest intensity of the pain. This is important in differentiating it from arthritis (rheumatism), for the treatment is not identical in the two conditions. Delay, on the one hand, would not only mean death of a greater or larger mass of bone, with an invalidism of weeks and months, and maybe years, but, if from a virulent organism, death to the patient; while, on the other hand, a few hours' delay, or a day or two, would, at the most, mean only an ankylosed joint.

A second and very suggestive symptom of this affection is a chill followed by high temperature—103 to 105—often with delirium, rapid pulse, etc. The pain is of a boring character, and is frequently worse at night. Nearly all cases require a hypodermic of morphine—at least, this has been my experience. The swelling and œdema is a later manifestation. This is an important point, as it differentiates this serious malady from arthritis, on the one hand, and periostitis, on the other, both of which are accompanied early after the onset by swelling and the œdema. Being encased in a bony wall, such as the lower end of tibia, you would not expect any swelling, redness, heat, or œdema until the wall had given way and the pus ruptured through it and burrowed under the soft structure, finally rupturing in a week or ten days through the skin. This is a pitiful condition and a sad commentary on the profession when it has occurred. It may be said of the above condition, as has so often been said of appendicitis when pus is found on the outside of the appendix and free in the peritoneal cavity: "The doctor in charge has loafed on the case." The leucocyte count is very high in this disease in its incipency, running from 20,000 to 40,000. This is because the pus is encased in bone and held under high tension. This alone will help you to make a diagnosis.

The sudden onset, with the deep, boring pain,

the initial chill, an extremity that is incapacitated in less than forty-eight hours, will brand the trouble as acute osteomyelitis, infectious, but not tubercular, as it takes several weeks of inconvenience of the extremity before incapacity takes place in this last condition. The pus may travel from one extremity of the bone to the other, or may burrow through the bone and travel a great distance under the periosteum and produce death of the entire bone, necessitating its removal and in its place a transplant from the other extremity, or it may be localized at the original point that the metastasis took place and produce only a small sequestra that comes away several weeks (six) after the pus has evacuated itself through the skin.

The treatment of these cases is the simplest part in the handling of them, provided you have made an early and accurate diagnosis. If you are going to prevent the death of the bone, and possibly of your patient, and not have the mortification of seeing a sequestra come away later, you must operate in acute infectious osteomyelitis within the first twenty-four hours. An ordinary pocket case, such as all beginners in the practice of medicine possess, and those practicing in the country where they cannot be laden with extensive operating outfits, will suffice to relieve the condition.

I remember the first case that came under my observation occurred when I had been practicing medicine only a few weeks, ten miles in the country. It was a young mulatto boy, who gave the most typical history of the condition that I had ever seen. I had my pocket case, but no bone instruments; so I borrowed an ordinary wood hand gimlet, such as is found in all tool boxes. Under local anæsthesia I anæsthetized the skin over the upper end of the tibia, cut through the periosteum down to the bone. With the gimlet I bored three small holes in the medullary canal. The pus fairly spurted out of these openings. I had no chisel to connect the three openings; but in spite of the small caliber of them, the boy made a complete recovery in five or six weeks.

I will not detail to you the cases that have come to me of chronic osteitis following attacks of acute osteomyelitis, ranging from one to twenty-five years, but will relate one or two recent cases of acute osteomyelitis that came under my observation early.

One, a child of twelve years, taken with the

characteristic syndrome, chill, high fever, rapid pulse, pain in the region of the internal malleolus not definitely located at the site of the joint, the joint not swollen to any extent. She was suffering horribly, had been treated by a doctor in a near-by town for three or four days for rheumatism. She was extremely toxic. I saw her at eleven o'clock in the morning, diagnosed the case as osteomyelitis, and operated at twelve. The pus was in the metaphysis, and flowed freely. A liberal incision in the skin, as well as a liberal opening in the bone, was made. A probe was passed up the medullary canal carefully, yet for a distance of two or three inches. No curettage was done; the cavity was simply wiped out with gauze around a Carmalt forceps. Pure iodine was then applied freely in the bone cavity, the wound drained with one-quarter-inch rubber tubing, and the skin sutured with silkworm gut, interrupted. The patient did beautifully for five or six days. The temperature, pulse, and pain subsided with the opening of the bone. On the sixth day she had another severe chill; her temperature rapidly rose to 104.4-5 and pulse to 130. She became very restless, with intense pain in the third metatarsal bone of the opposite foot. A diagnosis of acute osteomyelitis was made in a few hours after the chill, as the blood count, which had been previously taken before the first operation, showed a rapid increase in leucocytes and a high percentage of P. M. N.'s. The bone was opened along its dorsal aspect. Pus flowed from the bone, but not so much as in the first instance. With the opening of the bone the temperature and all other pathological symptoms subsided. The patient went home at the end of two weeks from the time of entry, twelve days from the second operation. Both bones were still discharging, but very little. The foot had the characteristic secondary œdema that you so often see in these cases, and the patient was still incapacitated. She would not stay longer; and although I gave her dressings and alcohol to last for ten days, I heard at the end of the month, that, while she was going around, she still had some discharge from the sinuses. A later report, not direct from the family, stated that she was all right. These cases are slow to heal, requiring some time for complete recovery, even though the operation is promptly done.

A second and more recent case was that of a young married woman, aged twenty-two, native

of Mississippi; two children, youngest five months old. She came to the mountains for the summer. After being here two weeks, she developed pain in the region of the right ankle, followed by a slight chill, temperature 103. I saw her on the second day; and after a close investigation of her case and examination of her tonsils, skin all over the body, a vaginal examination, oral examination, I came to the conclusion that she had osteomyelitis of a mild character in the lower end of the shaft of the tibia. She suffered extreme boring pain, but could not tell whether it was in the joint or in the bone. However, she did not give any history of any trouble during her recent labor, nor of any considerable leucorrhea or any primary focus of infection. As she had a nursing baby, I temporized with her for twenty-four hours, she being ten miles out of town, giving her salicylate and local applications to the affected limb, as well as cathartics, etc. At the end of this time she was about the same as when seen on the second day. On the fourth day I brought her to the sanitarium, made a white blood count, which was high, and operated over the tenderest point. Only a small amount of pus was found. The pain in the limb and the temperature subsided, and she made an uneventful recovery, leaving the hospital in three weeks. The wound healed completely at the end of the fourth week. This case was drained for a week and the usual treatment, as outlined in the former case, followed. I knew there must be some cause for this osteomyelitis, so I radiographed all of her teeth and found that two of them showed distinct abscesses at the roots. These were pulled, upon the advice of a competent dentist, and the abscessed mass was found hanging to the roots of the teeth—the causative factor.

In operating for acute osteomyelitis, I do not believe that one should use the curette, as you are liable to spread the infection, just as you will do in curetting a case of acute endometritis. Simply opening to the pus, which is under great tension, mopping it out and sterilizing with a good antiseptic, with drainage, is all that is necessary.

At the Mercy Hospital they begin, as soon as the operation is over, with auto-sensitized vaccines, claiming that the auto-sensitized vaccines give better results than the ordinary autogenous vaccines in these cases. On this last case we are still using the autogenous vaccine, but I believe with the Murphy Clinic that the auto-sensitized

vaccines will give better results. You can give larger doses of them and at the same time get none of the unpleasant symptoms of severe reaction which you sometimes encounter with stock vaccine or autogenous vaccine.

In conclusion, I will say that the dentists in ordinary toothache recognized long ago that simply boring a hole with a burr through the apical foramen into the abscessed cavity relieved the pain and cured the condition, and the same holds good in acute infectious osteomyelitis. Bore a hole into the affected bone, and do it quickly, before the death of the bone takes place and before general systemic infection takes place, with the possible death of the patient.

DISCUSSION.

In very early cases of acute osteomyelitis the radiograph is valueless, as no destruction of bone has taken place.

In case you do not strike pus when operating early, that is visible to the eye, you must not conclude that you are mistaken in your diagnosis. You have at least prevented gross lesions from forming, or possibly you have missed the pocket of pus; but in all events drain, and the pus will make its way to the opening that you have made in the bone.

I forgot to say that tubercular bone disease always begins in the epiphysis. Syphilis more frequently starts in the periosteum, and is felt as nodules along the crest of the tibia and other bones. A frequent site is the cranial vault. Both of these affections are much slower in progress and not nearly so painful. A syphilitic bone abscess is not circumscribed and sharply walled in, as acute osteomyelitis is. The gumma, which are late manifestations of this disease, are soft and spongy.

The Wasserman reaction, on the one hand, and tuberculin reaction, on the other hand, as well as the inoculation of the guinea pig and the low leucocyte count in the latter, would help to differentiate in both the syphilitic and the subacute type of osteomyelitis.

Typhoid fever is contracted by swallowing sewage.

The maintenance of health is the first duty of the patriotic American.

FAT INDIGESTION IN INFANCY.*

BY J. M. LEE, M.D.,

Nashville.

Of all the etiological factors in infant morbidity and infant mortality, disturbances of nutrition are the most important. They in themselves are many times fatal, and often they prepare the soil for acute infections which turn the tide against recovery. The most frequent, and usually the first, evidence of a disturbance of the nutrition of an infant is diarrhea. In five years there were reported in New York City 26,563 deaths from diarrheal diseases in children under two years of age, being 3,233 more deaths than were reported to have been caused by measles, scarlet fever, diphtheria, whooping cough, and typhoid fever in all ages for the same period.¹ According to a recent bulletin issued by the Tennessee State Board of Health, there were reported in Tennessee in 1915, 1,107 deaths in children under two years of age from diarrhea and enteritis.² These figures do not include those cases in which the cause of death was ascribed to "marasmus," "malnutrition," or "infantile atrophy," conditions which are primarily and necessarily produced by disturbances of nutrition.

From these facts we see that the problem whose solution means the reduction of infant mortality exists in every community, and it is the duty of every member of our profession to lend his best efforts to the prevention of this enormous wastage of human life. We appreciate the many obstacles to be overcome and the complex nature of such an undertaking, but this fact stands out from the rest: A comprehensive knowledge of the principles of infant feeding intelligently applied is our most effective weapon.

According to Holt, less than 5 per cent of the severe cases of diarrhea are among the breast-fed, and fatal cases in the exclusively breast-fed are rare.³ Breast feeding is, as a rule, successfully managed by the average mother without digestive trouble for the baby, but occasionally we see the exception to that rule. Artificial feeding is one of the most important causative factors in nutritional disturbances. It demands a knowledge of physiology and metabolism not ordinarily possessed by the mother, and the feed-

ing will not be successful unless it is done with intelligence, good milk, and some experience.

It is a well-known fact that a proper food for an infant should contain fat, carbohydrate, protein, salt, and water; and, furthermore, these elements must be combined in the proportions that best fit the digestive capacity and satisfy the caloric requirements of the growing child. So in ordering a formula for an infant, we must not lose sight of the fact that we are prescribing certain definite substances to meet certain definite conditions and requirements. And just as we know the dosage, the physiological action, the indications, and the contraindications for the use of drugs, so should we be familiar with the properties of the foods we use. The same thought and care exercised in the selection of each drug employed in a prescription should be given each element in the food, for many digestive disturbances in infancy are due to the improper use of a single food element. But a discussion of the uses and abuses of the various parts of an infant's dietary would lead us too far afield, so for the present we shall confine ourselves to a consideration of the improper use of fat in infant feeding.

The fats usually employed in infant feeding are derived from human or cow's milk. Gerstenberger, Haskins, McGregor, and Ruh,⁴ in search of an artificial milk similar in all of its important characteristics to human milk, used successfully a food in which the fat was supplied by various combinations of lard, cocoanut oil, cocoa butter, and cod liver oil. Ladd has used with marked success homogenized olive oil in cases with an intolerance for cow's fat. These foods, however, require specially equipped laboratories for their preparation, and are not as yet available for general use.

In human milk the fat is in a very fine emulsion. When the number of fat globules are counted in a counting chamber, there are always more in human milk than in cow's milk.⁵ This may be one reason why the curd formed from human milk in the gastric digestion is smaller, more flocculent, and not so tough as the curd from cow's milk. And this physical difference in the curds from the two milks naturally makes the curd from human milk more readily accessible to the digestive juices, and therefore more readily digested.

In human milk the percentage of fat varies at

*Read before the Nashville Academy of Medicine and the Davidson County Medical Society.

different times during the day; but if all the milk secreted in twenty-four hours is collected, the daily percentage will remain constant, even if the total amount of milk is increased.⁶ The percentage of fat is smallest at the beginning of nursing and largest at the end of nursing, varying between one per cent for the first milk drawn and ten per cent for the last milk taken. For practical purposes the fat content of human and cow's milk is usually reckoned as averaging four per cent in each. Some infants may utilize the fat of cow's milk as well as that of human milk, and may thrive on artificial foods containing approximately the same amount of fat as human milk. But this is possible only when the tolerance for cow's fat is built up by giving at first feedings low in fat and gradually increasing the amount. If, however, we should change the baby's food abruptly from human milk to cow's milk, and feed the same percentage of cow's fat as human fat, we would surely invite disaster.

The reason why some infants cannot tolerate the same amount of fat from cow's milk as from human milk has never been proven, but Niemen⁷ attributes this to the fact that cow's milk contains more than ten times as much of the volatile fatty acids as human milk. In proof of this theory he shows that children who cannot take cow's-milk fat with safety may be fed large amounts of oil, and that the best oils are those containing the smaller amounts of the lower volatile fatty acids.

Perhaps the most frequent cause of fat indigestion in breast-fed infants is improper diet of the mother. The error usually lies in permitting her to take too freely of a too liberal diet. Contrary to the older teachings, the fat content of breast milk is not influenced by the protein content of the mother's diet, but is due to an excess of food in general, rather than to an excess of any one element, and can be diminished by cutting down the food as a whole.⁸

As a predisposing cause, atmospheric heat plays a part in all forms of indigestion. The exact manner in which it affects the physiology and metabolism of the infant has never been explained satisfactorily; but it is a well-known fact that it is a very important factor in producing intestinal disturbances, presumably by its powerful depressing influence on the vital forces.

In all acute infectious diseases the digestive power is weakened, and unless the food is diluted

diarrhea is quite the rule. But neither atmospheric heat nor the acute infectious diseases show any selective action on the fat digestion. They are predisposing causes to intestinal disturbances, and any intestinal disturbance that is prolonged may result in a fat intolerance.

A large portion of the fat absorbed from the intestinal tract goes through the portal veins to the liver; the rest of it is carried by the lymphatics through the thoracic duct to the blood stream.⁹ Tuberculous peritonitis in babies is primarily a disease of the lymphatic system, and when the mesenteric glands become caseous they form a dam beyond which the fat cannot pass. Hence, in such cases there is an intolerance for fats, they are not absorbed, and large amounts are found in the stools.

Czerny¹⁰ believes that babies with an exudative diathesis can be harmed by fats. He finds that an increase in the amount of fat will cause eruptions on the skin. Steinitz and Weigert¹¹ have apparently proved the correctness of this assumption by a metabolism experiment.

According to Morse and Talbot, indigestion is more often due to an excess of fat in artificial food than to any other single element. The results of a disturbance of the digestion from this cause are, moreover, more far-reaching, more lasting, and more difficult to correct than those due to any other element.¹² In many cases of chronic fat indigestion there is a history of over-feeding of carbohydrates, so that a case may start with a carbohydrate indigestion and develop a fat indigestion. These are the most difficult of all to treat, because we must give low fat and low carbohydrate foods, and depend on the protein alone to supply the caloric requirements.

As ordinarily used, feedings made up from proprietary foods contain low percentages of fat, and when such feedings are employed over long periods the infant's digestive capacity for fats is proportionately lowered through disuse. So if we attempt to give a mixture containing as much cow's fat as is ordinarily given to such an infant, we will find that it has a fat intolerance and cannot digest as much fat as a normal infant the same age and size would digest.

The pathological changes in the gastroenteric tract in digestive disturbances in infants are insignificant. There may be thinning of the intestinal wall, reddening of the surface, and an excessive secretion of mucus, or desquamation of

the epithelium. The microscopic changes are unimportant. In the chronic cases there is a general wasting of all the tissues in the body, while both acute and chronic cases may show degenerative changes in the parenchymatous organs.¹³

Indigestion from any cause may produce loss of appetite, vomiting, regurgitation of food, gas on the stomach, failure to gain or loss in weight, and a cross, irritable baby. And there may be nothing in these symptoms to indicate the exact source of the trouble. Sometimes an accurate history may disclose that there has been an over-feeding of fat, and this would point to the diagnosis in the presence of the symptoms given above. But we must remember that often the case that began as a carbohydrate indigestion develops a secondary fat indigestion, and that the fat indigestion may be the more serious matter.

In acute cases of fat indigestion there may be a temporary elevation of temperature, and usually there is diarrhea. The stools are watery, loose, acid in reaction, and contain small, soft, yellow curds and mucus. They may be irritating to the skin and excoriate the buttocks, though this more often results from fermenting carbohydrate. They may be yellowish or greenish in color, and are usually oily looking, having the greasy appearance of scrambled eggs. In such a stool the presence of undigested fat is shown roughly by rubbing a portion between two layers of smooth, white paper, which gives the paper the appearance of having been oiled. There are other tests for determining the amount of fat in the stool, and of these the microchemical method is the most practical for ordinary work.

Not only is there a loss of an excess of fat in these stools, but the body is drained of an abnormal amount of salts, so that a relative acidosis may develop with hyperpnea, cherry-red lips, restlessness or stupor, and this may terminate fatally.

Chronic indigestion from fat in the breast-fed I have never seen described. I find no reference to such a condition in the literature, and have never seen a case so diagnosed. But there are cases that cannot tolerate breast milk unless it is skimmed that have developed a fat intolerance while taking cow's milk.

In the artificially fed we may not be able to make a diagnosis of chronic fat indigestion until

after several days' observation. Usually there is a history of repeated attacks of diarrhea, with periods between in which there is little or no gain in weight. In these intervals the baby may be constipated, and the constipation may be due to the excess of fat ingested. The stools at this time may be large, grayish, dry, hard, and at times crumbly. On microchemical examination they will show an excessive amount of soaps. These cases show a peculiarity that has been described by Dunn¹⁴ as a "fat blow-up," and in the following paragraphs I shall quote freely from his discussion on the subject. He summarizes the typical features of these cases in these words: "Inability to gain with fat and inability to gain without it." When the fat is increased in these babies, in the hope of obtaining a gain in weight, the fat intolerance is not shown at once, but the infant does gain in weight. But excessive soap appears in the stool, and after many days, perhaps, there is a "fat blow-up," the infant vomits, has a diarrhea, and within a day or two loses more weight than he has gained. Sometimes these "blow-ups" result in collapse, cyanosis, cold extremities, and may even be fatal. But if the baby survives the upset, its chances of recovery are not only postponed, but are decreased. The more "fat blow-ups" the baby has, the less chance of ultimate recovery. Where this condition of diarrhea, alternating with constipation, persists, with one or two "fat blow-ups" added, the child soon presents the characteristic picture of "marasmus," or "infantile atrophy."

The prognosis in acute indigestion from fat varies with the severity of the attack. In even the milder cases the tolerance for fat is built up slowly, and the more severe cases may result fatally. In the chronic cases the prognosis depends on the duration of the condition and the degree of disturbance of the nutrition. Relapses are frequent, and the least excess of fat produces them, making ultimate recovery very slow.

Treatment in this, as in many other conditions, more properly begins with prevention. A few directions carefully given to the nursing mother regarding her habits, diet, and exercise may spare the breast-fed infant an upset. For the bottle-fed baby, we should, in addition to assuring it a good milk properly handled and supervised, prescribe a mixture that fits its digestive capacity with as much care as we would prescribe the most potent drugs. In extremely

warm weather it is a safe procedure to dilute the feedings. And this should always be done in the presence of acute infectious diseases.

Given a breast-fed infant with a fat indigestion, it usually suffices to have the mother eat less, take more exercise out of doors, and to nurse the baby for a shorter period. If the baby is vomiting after the feedings, it may be well to give a teaspoonful of lime water with an equal amount of sterile water just previous to nursing. Very rarely it may be necessary to draw the milk with a breast pump and skim it before giving it to the baby. Don't be too hasty in weaning the baby, for it can more easily adjust itself to breast milk than to cow's milk.

In an acute indigestion from fat in an artificially fed baby the first indication is to remove the offending element. In the presence of temperature and a distended abdomen in a well-nourished infant a preliminary clearing of the intestinal tract with castor oil is advisable. In the absence of these symptoms the oil is perhaps best omitted, especially if the baby is much depleted from diarrhea, but it would be well to wash out the lower bowel. It may suffice to reduce the fat in the food of the milder cases, but in all cases it is better to remove all fat for a few days. We do no harm to the baby by giving for a few days a fat-free mixture, and always time is saved and recovery is hastened by such a measure. As soon as the symptoms have subsided and the stools improved, we may add small quantities of fat to the food slowly, waiting several days between the additions. Some cases do not yield to such a plan of treatment, but become chronic.

Often in the chronic cases we must give a fat-free food for a much longer period, even though there is a failure to gain or loss of weight. It is well to remember that fat has twice the caloric value of protein or carbohydrate, so that in giving a fat-free food we should supply part of the calories required in the form of carbohydrate and protein, though these elements should not be given in excess, for either of them may produce an upset. These cases seem to do better when the added sugar is some form of malt sugar. Dunn¹⁴ thinks that maltose aids the power of digesting and absorbing fat; and if this is true, it lends support to the assumption that indigestion and fermentation from other forms of sugar are predisposing causes of fat indigestion.

When these chronic cases show more nearly normal stools and some general improvement, we may begin to give very small amounts of fat at intervals of several days. After each addition of fat a careful microchemical examination of the stools should be made daily. If excessive soap is found persistently, then the baby is taking more fat than he can properly care for, and it should be decreased, or a "fat blow-up" will result. The presence of free fat in the stool is always an indication for a fat reduction in the food. Dunn found in the cases he studied that there was always an excess of soap or free fat in the stool before a "fat blow-up."

In spite of the most careful management, some of these cases show no improvement on artificial foods, and then breast milk must be resorted to. And although they cannot tolerate the smallest amount of cow's fat, they may take breast milk, even though it may contain three and one-half or four per cent fat, and thrive. Furthermore, after a period of breast-milk feeding their tolerance for cow's fat will be built up so that they can again return to artificial food and may tolerate even higher percentages of fat than previously.

Unfortunately, a few of these severe cases cannot digest and assimilate breast milk, and in such cases it is barely possible that by giving skimmed breast milk and gradually adding the fat a tolerance for the fat of human milk may be acquired and in time the baby be able to take cow's milk. However, the prognosis in such a case is exceedingly grave.

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THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn.****FEBRUARY, 1917****EDITORIALS****THE NASHVILLE MEETING.**

The regular annual meeting of the Tennessee State Medical Association will be held in Nashville on April 3, 4, and 5. Dr. C. N. Cowden, President, will be in the chair.

The Committee of Arrangements, composed of members of the Nashville Academy of Medicine and the Davidson County Medical Society, will have announcements in the Journal for March. The preliminary program will appear in this number of the Journal, too.

County Societies which have not elected delegates and alternate delegates should do so at once, and their names should be forwarded to the Secretary of the State Association. Every County Society is entitled to at least one delegate in the House of Delegates. Societies having more than fifty members and less than one hundred are entitled to two delegates; those with more than one hundred and less than one hundred and fifty-one members are entitled to three delegates; those with more than one hundred and fifty and less than two hundred and one members may send four delegates. An alternate delegate should be chosen for each delegate.

The House of Delegates will meet at two o'clock on the first day, unless otherwise announced, and at eight o'clock and at two o'clock each day thereafter until all business is completed. The County Societies should send strong men as delegates. The business of the State Association is important business, and needs the thoughtful attention of our very best men. In the absence of a delegate, an alternate delegate must serve in the House of Delegates; hence the alternates should be selected with as much care as is given to the choosing of delegates.

Whatever is presented to the House of Delegates should be presented in proper form and after careful thought. Resolutions should be written out, and any new business which involves

precedent, or which will necessitate expenditure of money, or which will commit the Association in any manner, should be brought before the House of Delegates in such manner that its whole import and effect may be readily explained and its advantages made clearly apparent. Too often has it been that action of far-reaching importance has been taken "on impulse" and without a clear understanding upon the part of the House of Delegates as to just what was involved.

The attendance at the Nashville meeting should be larger than any yet recorded. Our 1916 membership was considerably larger than in any previous year, and 1917 reports are coming in pretty well. We hope to have a good program and to have some new features which will be intended to interest and instruct our members.

Make your plans to be on hand *in Nashville* not later than eight o'clock Tuesday morning, April 3, and to stay until everything is over.

ANÆSTHETICS AND NURSES.

The state medical societies and boards of medical examiners of several states are all "hét up" over the employment by surgeons of nurses as anæsthetists. The situation is especially acute in Kentucky and Ohio, and is becoming hot in several other states. The Kentucky State Medical Association received a report from a committee which declares that surgeons who use nurses as anæsthetists are guilty of unethical practice, and talks about "quackery" and so on. In Ohio a hospital in which the guiding spirit is a surgeon of world-wide fame has been declared unfit for recognition as a training school for nurses because anæsthetics are given in this institution by nurses. Surgeons and doctors are saying hard things about each other because the surgeons want to employ nurses and the doctors don't want them employed as anæsthetists.

An awful lot of fuss is being made, much of which is not to the point, and is not only profitless, but positively harmful, to the surgeons and to the doctors alike. If the wranglers are not careful, "somebody's goin' to tell the truth here to-rectly and break up this here meetin'." Still, there's lots of fun in it, and we might as well enjoy it while it lasts.

"Surgeons, in these days of their highness and mightiness, find it hard to discover any ability in

any doctor not a surgeon, and, since some of the most widely known operators began to use nurse anæsthetists, they have noticed that one of the great outstanding deficiencies of the common doctor is to be found in his absolute inability to give anæsthetics decently." So said a doctor to us lately, and then went on: "Now who has given their anæsthetics all these years? The licensed, educated doctor—that's who. Did you ever see one of these surgeons try to give an anæsthetic? Rotten, all of 'em! It is surprising indeed that they will so outrageously disregard all rules of law and ethics, as they do when they employ nurses—with no medical training and no license to practice—to give anæsthetics. The doctor of to-day is surgeon-ridden, and this last move of the surgeons is just one more to boost their own game and lessen the income of the doctor. Why shouldn't doctors continue to do what they have done, under the law, and according to the principles of ethics, ever since anæsthesia has been known? And why shouldn't they have their five or ten dollars for this expert service?"

Well, we asked a few surgeons "why?" This is what some of them said: "The ordinary doctor is a very poor anæsthetist. He is not trained properly in the art of giving anæsthetics. He looks at the operation. He is thinking of other things, because the giving of anæsthetics is a 'side line' matter with him, through which he picks up five or ten dollars in spare hours. [Horrors! Just think of paying a doctor! In these days when surgeons can't get rich in less than five years, even though nurse anæsthetists are employed! (That wasn't said by the surgeons.)] The hospital interne, ordinarily, is a poor anæsthetist, too—much for the same reason that the average doctor is. And what have these kicking doctors to say of their own infractions of rules of ethics and law? Don't they often use just any bystander to give chloroform in obstetrics? Don't they? And don't they have nurses—unlicensed nurses—to give 'hypodermics' for them?"

This matter of the proper administration of anæsthetics is one of very great importance. And it is one, too, it seems to us, that concerns not

only the surgeon and the doctor. There is a third party who is a necessary factor in most surgical or medical procedures, and who is generally the producer of the coin which pays for them all—the patient. While none of the surgeons nor of the doctors to whom we talked about this matter of nurse anæsthetists had anything to say of him, we are somewhat inclined to the view that the patient is entitled to some consideration in these premises. In fact, we almost are ready to believe that the whole thing can be settled decently and right on a basis of what will contribute most to the safety of the patient.

If a nurse trained to administer anæsthetics can better suit the responsible surgeon and contribute to the factor of safety in his work, let him have his nurse—licensed to administer anæsthetics.

If the doctor, already licensed, wants to give anæsthetics, let him give them for whomsoever wants him to perform such service.

And there will always be times, as always there have been, when no doctor nor any nurse can be had to give exclusive attention to the anæsthetic. At such times we will all do what always we have done—have the best available somebody to hold the inhaler.

THE AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS.

The American Board for Ophthalmic Examinations held its first examination in Memphis on December 12 and 13, 1916. The Board is composed of representatives of the American Ophthalmologist Society, the American Academy of Ophthalmology and Oto-Laryngology, and the Section of Ophthalmology of the American Medical Association, and is for the purpose of examining into and certifying to the qualifications of those desiring to practice ophthalmology. Detailed information is being sent out to all ophthalmologists, and it is hoped that all who are qualified to receive the indorsement of the Board will apply for and receive the certificate. To those whose record, standing, and years of service justify it the certificate will be issued without examination, while others will be asked to submit to a test. The examination includes the submission of case histories, to be followed by a

written and practical examination covering all the subjects that an ophthalmologist should be versed in. The next examination will be held in New York City preceding the meeting of the A. M. A. It will be a source of pride in the future that the work of this board was begun in our state, and that the first licentiates were our fellow-practitioners. The Secretary of the Board is Dr. F. C. Todd, Donaldson Building, Minneapolis. E.

PUBLIC-HEALTH LECTURE COURSE.

During the months of February, March, April, and May, 1917, a course of lectures on public health will be given at the University of Tennessee College of Medicine by the Department of Public Health and Bacteriology. Twelve lectures will be repeated four times, each set of lectures being a complete course. The purpose of the course is to familiarize the student and the physician with the character and extent of public health work in general, accentuating the problems confronting us in this section of the country. The arrangement of repeating the course four times in as many months is to accommodate the senior students of the department of medicine, and at the same time render the course more available to county health officers and other practicing physicians. The course is open to senior students of the department of medicine, to county health officers, and to other physicians who may care to attend.

Five members of the medical faculty have been detailed for the work. The lectures will cover as completely as possible in so brief a course:

1. Communicable diseases, with especial reference to the report and control.
2. Sanitation, including water supply and purification, sewage disposal, and the problem of housing.
3. Food, inspection of, control of, and pasteurization of milk supply, etc.
4. Laboratory, methods of diagnosis and examination of foods, water, etc.
5. Medical inspection, the school, the workshop, etc.
6. Control of special diseases, such as malaria, tuberculosis, etc.
7. Vital statistics.

Efficiency decreases as fatigue increases.

DR. J. S. CAIN.

Nashville, Tenn., December 19, 1916.

Nashville Academy of Medicine:

Your committee appointed to draft resolutions on the death of Dr. J. S. Cain would make the following report:

Dr. Cain, for many years a resident of this city, during the whole of which time he was a member of this Academy, departed this life on December 3, 1916, at the ripe old age of eighty-seven years. He was born in Sumner County, this state, and grew into manhood in his native county. His medical education was obtained in the Medical Department of the University of Nashville, himself one of the earliest graduates of that school. A part of his medical career was spent at Okolona, Miss., where he became prominent and was beloved by the profession and people of his adopted state. A great student, he qualified himself for the work of teaching, and returned to his native state to take up that work as Professor of General Medicine in the Medical Department of the University of Tennessee, then located in this city. Later he occupied the same chair in the combined Medical Departments of the University of Nashville and Vanderbilt University, retiring from this chair several years ago that he might establish the Medical Department of the University of the South at Sewanee, in which he taught general medicine until that department was discontinued. During a part of this period of his life he continued to reside in this city. He developed into a great teacher, continuing in this, to him, delightful work until well past threescore and ten years. His later years were quietly spent in the home of his daughter, Mrs. West, at Sewanee, coming to this city only occasionally, in whose home he died.

Many of us remember his active interest, not only in our local society, but also in the meetings of our State Medical Association. No one was heard to speak in these bodies with more pleasure and interest on the part of the membership.

During the life of the Southern Medical College Association he was an earnest, active member, and to his voice and vote much that was accomplished by that organization should be credited. He wrote the constitution and by-laws of that body, and was the author of subsequent

amendments looking toward advancement in medical teaching.

Resolved, (1) That in the death of Dr. Cain there comes to a final close a medical life worthy of emulation. His earnestness as a student and his thoroughness and gentleness as teacher and practitioner made for himself a name that we revere. His influence as a teacher continues to live after him in the activities of those he taught.

Resolved, (2) That we extend to the bereaved daughter, Mrs. West, and son, Mr. Walter Cain, our sympathy, and that a copy of this report be sent to each of them.

Resolved, (3) That this report be spread on our minutes, and that publication of same be made in the local medical journals.

D. J. ROBERTS, *Chairman*;

W. R. SIFFORD,

G. C. SAVAGE,

Committee.

AN INVITATION.

The Nashville Academy of Medicine and the Davidson County Medical Society extend a most cordial invitation to the profession of the state to hear Dr. J. A. Fordyce, who will address the Academy on Tuesday evening, February 27. Dr. Fordyce is Professor of Dermatology in the College of Physicians and Surgeons, of New York, is the head of the Vanderbilt Clinic for Skin Diseases, and one of the foremost syphilographers of America. His address before the Nashville Academy will be on some features of the general subject, Syphilis. The meeting will be held at the Tulane Hotel at eight o'clock Tuesday evening, February 27.

DAKIN'S HYPOCHLORITE SOLUTION.

The following procedure is claimed to have superseded the previously published formulas: Stir 200 gm. chlorinated lime into 5,000 cc. ordinary water and let stand overnight; dissolve 100 gm. anhydrous sodium carbonate and 80 gm. sodium bicarbonate in 5,000 cc. cold water, and pour this into the chlorinated lime mixture and shake for one minute. After one hour, siphon off the clear liquid and filter it through paper. A portion of this must not become red if a little dry phenolphthalein is added to it.—*Journal of American Medical Association*, December 2, 1916, page 1687.

NOTES AND COMMENTS

1,617 members on the 1916 roll!

735 members on the 1917 roll up to February 10.

Dr. W. H. Baldwin is now located at 712-713 Exchange Building, Memphis.

Let's have at least 1,700 this year. We can do it easily if all 1916 members will "stick."

Dr. J. Herman Barnett, of Chattanooga, has opened a private hospital at 449 McCallie Avenue.

Dr. W. J. Winter, of Chattanooga, has just returned from a visit to the Clinics at New Orleans.

Dr. J. S. Dye, formerly of Chattanooga, who has been in the East for the past few years, has located at Waterbury, Conn.

Dr. Cooper Holtzclaw, of Chattanooga, has fully recovered from his recent auto wreck, at which time he suffered injuries to his chest.

Dr. William J. Hillas, of Chattanooga, now with the troops on the Mexican border, writes that he will return to his practice in February.

Dr. George Werter Drake, formerly an honored member of the Chattanooga profession, died at his home in Kansas City on November 3, 1916.

The constitutionality of the Tennessee Vital Statistics Act has been upheld by the Supreme Court. An account of the decision, handed down by Justice Grafton Green and unanimously concurred in, will be given in the next *Journal*.

The new officers for 1917 of the Chattanooga Academy of Medicine are: President, Dr. H. L. Fancher, Chattanooga; Vice President, Dr. John B. Steele, Chattanooga; and Secretary and Treas-

urer, Dr. H. P. Larimore, Chattanooga, re-elected.

Mayor J. M. Littleton, of Chattanooga, has appointed Mr. Milton B. Ochs, of the Chattanooga Times, on the Board of Trustees of Erlanger Hospital. On the reorganization of the board, Mr. Ochs was chosen President of the board.

The Chattanooga Academy of Medicine is attempting, through a special committee, to have the County Court of Hamilton County provide more adequate accommodations for incurable tuberculous patients and for tuberculous colored patients.

The Volunteer State Life Insurance Building, corner Georgia Avenue and East Ninth Street, Chattanooga, is rapidly nearing completion, and many physicians have leased offices on the fourth, fifth, and tenth floors, which will be equipped for doctors' offices exclusively.

Some of our "old reliables" have not yet reported for 1917—like Bedford, Carroll, Chester, Cumberland, Fayette, Gibson, Giles, Greene, Hardeman, Hickman, Lauderdale, Lincoln, Macon, McMinn, Rhea, Rutherford, Sevier, Sumner, Sullivan, and Washington.

The last annual meeting of our Association was in several respects the best meeting. We want the next one to be better. You can help to make it so by being on hand in Nashville early on the morning of April 3 and staying until the last fall of the gavel on April 5. Will you?

The report of Secretary Larimore shows that the Chattanooga Academy of Medicine held fifty-two regular meetings during 1916, with an average attendance of *members* of thirty-seven and one-half. The lowest attendance at any one meeting was eighteen; the largest, ninety-five.

Dr. J. W. Jobling, Professor of Pathology in Vanderbilt School of Medicine, delivered the Harvey Lecture of 1917 in February, on the

subject: "The Influence of Nonspecific Substances on Infection." To be chosen as a Harvey lecturer is a high honor—in this instance well bestowed.

The program for the first six months of 1917 for the Chattanooga Academy of Medicine is off the press, and contains sixty papers, including four from out-of-town visitors. This is the largest effort ever made by the Chattanooga profession in the way of producing essays, and certainly shows a lively interest in the society by its membership.

A secret: One of the doctors to whom we talked about the matter of the administration of anæsthetics by nurses, and *the* one who roasted the surgeons worst, is in the habit, we hear, of doing little surgical jobs on the side and using for his anæsthetists one young man who is a drug clerk and another who "is going to study medicine." He pays them—nothing at all. Of such is *not* the kingdom of heaven!

A new advertisement in this Journal is that of the Victor Electric Corporation. The Advertising Manager, Mr. Kahl, writes us: "It is the policy of the Victor Electric Corporation to stand for the *truth* at all times in all of its advertising, correspondence, and sales work. If at any time, in going over our copy, you find any statement which is questionable, call our attention to it, and we will furnish sufficient proof of its authenticity or will withdraw it." That's the kind we want.

Some of our "big" surgeons started all this fuss over nurse-anæsthetists. If other surgeons can't do like the "big uns" do—why, what's the use of being a surgeon? "Crio has a nurse to give his anæsthetics, and so has Mayle. Goodness gracious! Fire the internes and chase the doctor-anæsthetist out of the hospital! Send a nurse to somewhere for a week or two for training in the art of giving gas and stuff! It will never, never do not to try to do like Milo and Crayle! We just must have a nurse-anæsthetist—even if we have to pay her seventy-five a month!"

Several new physicians have recently located in Chattanooga, among them being Dr. E. H.

Adkins, who will specialize in general surgery; Dr. E. M. DeLay, a native of Rome, Ga., has located in the Loveman Building; Dr. E. M. Harrison, a brother of Dr. J. J. Harrison, Jr., of Loudon, Tenn., has opened offices in the James Building (Dr. Harrison formerly practiced at Hartranft, Tenn.); Dr. Bernard Aronchik has located in the Carlisle Apartments; Dr. Lewis P. Brooks, recently returned from the European war zone, where he did service with the German Army Medical Corps, has taken offices in the VanDeman Building.

SOCIETY PROCEEDINGS

FAYETTE COUNTY.

The Fayette County Medical Society met January 2, 1917, and the following officers were elected for the ensuing year: Dr. C. W. Robertson, President; Dr. J. E. Parkes, Vice President; Dr. H. C. Moorman, Secretary and Treasurer. Dr. J. A. Albright was elected Delegate to the State Association meeting, and Dr. George Brinkley, Alternate.

"Pneumonia" was chosen as the general subject for discussion at the next meeting, which will be February 6.

H. C. MOORMAN, *Secretary*.

DICKSON COUNTY.

A letter from Dr. Hartwell Weaver, Secretary, brings word that the Dickson County Medical Society has had a good year. The meetings of the society have been held regularly on each "first Tuesday," and from one to three papers have been read at each meeting. The discussions have been spirited, and have been entered into by most of the members. Dr. Weaver has reported eleven members for 1917. The officers are: President, Dr. L. F. Loggins; Vice President, Dr. A. C. Dickson; Secretary-Treasurer, Dr. H. Weaver; Delegate, Dr. W. J. Sugg; Alternate Delegate, Dr. J. C. Guerin.

MAURY COUNTY.

The Maury County Medical Society met January 1, 1917, in regular session in the Elks Club, Columbia, Tenn., at which meeting the new officers for the year took charge—viz.: President,

Dr. P. H. Faucet; First Vice President, Dr. J. G. Waldrop; Second Vice President, Dr. J. G. Williamson, Jr.; Secretary-Treasurer, Dr. M. A. Beasley. On roll call, fourteen members were present.

Reports on cases and new business were dispensed with and the essay for the day was taken up. Subject, "The Importance of the Relation of the County Medical Society to Public Health Conditions," by Dr. W. K. Sheddan. This proved one of the most interesting subjects we had heard presented in many meetings, and its being so ably presented by the essayist opened up a wide field of discussion by Drs. L. E. Ragsdale, H. A. Gant, R. S. Perry, and O. J. Porter. So much enthusiasm was aroused that the Maury County Society, by a unanimous vote, went on record as being in favor of a full-time health officer, and a legislative committee was appointed to confer with the Legislative Committee of the State Society as to the needs of Maury County in regard to public-health problems and how best to meet them.

The subject for the February meeting was then announced, "The Use of the X Ray in the Diagnosis and Treatment of Fractures," by Dr. J. G. Williamson, Jr. The meeting then adjourned to meet February 5, 1917.

M. A. BEASLEY, *Secretary*.

OBION COUNTY.

The Obion County Medical Society met in regular monthly session at Union City on December 9, 1916. Dr. H. W. Qualls occupied the chair, and ten members responded to the roll call. The essayist for this meeting, Dr. Prather, Jr., was not present, being in attendance at the bedside of his father, Dr. Prather, Sr. In the absence of an essay, the society heard a good talk on "Pneumonia" by Dr. W. F. Roberts. Two of our veteran members were absent from this meeting—Dr. D. M. Pierce, reported quite ill, and Dr. P. N. Matlock, who was celebrating his seventy-third birthday at his home. Their absence from the meetings of the society is always keenly felt.

J. D. CARLTON, *Secretary*.

HAMBLÉN COUNTY.

The Hamblen County Medical Society met Friday night and elected the following officers

for 1917: President, Dr. L. H. Milligan; Vice President, Dr. W. G. Ruble; Secretary and Treasurer, Dr. C. T. Carroll, Jr.; Delegate to the State Society, Dr. D. E. Shields; Alternate Delegate, Dr. G. P. Bingham. Dr. C. J. Fuller was elected a member of the society.

Dr. J. F. Campbell, after an interesting meeting, took the following doctors to the J. B. Willis Café for a fine oyster and turkey banquet, and to say that Dr. Campbell was a generous host is to put it very mildly: Drs. Campbell, Milligan, Henderson, Shields, Ruble, Howell, Pangle, Fuller, Bingham, Carroll, Ryburn; and Messrs. Turner, Freels, and Clark.

MEETING OF THE MEMPHIS SOCIETY
OF OPHTHALMOLOGY AND OTOLARYNGOLOGY, NOVEMBER 29, 1916.

(Dr. Richmond McKinney in the Chair.)

REMOVAL OF DISLOCATED LENS.

Dr. Fagin presented M. B., aged forty-nine years, whom he had presented to the society on two previous occasions. The first time, which was a year ago, patient had congenital cataracts, conical cornea, tremulous irides, and vision of 4-2000 in left eye and light perception only in right eye. On December 28, 1915, a needling was done on lens of right eye. The lens was found to be very hard and firm, and when pressure was made with the knife needle the lens was pushed backward into the vitreous and was loosened from all its attachments except those toward the inner canthus. Vision was restored to the extent of 20-200 in this eye. In February, 1916, patient was again presented to the society. The lens was still hanging, and would move backward and forward like a door on its hinges. This gave no trouble, and vision even grew better until April 2, 1916. On this date a typical attack of iridocyclitis came to this eye. Other attacks followed, and in June, 1916, a second needling was performed, which entirely liberated the lens from all of its attachments, the lens itself falling back into the vitreous and remaining stationary in the vitreous at its lowest level. The eye was quiet again until along in August; then the attacks of iridocyclitis returned. From the number of them that followed, it was plainly seen that the

dislocated lens was acting as a foreign body, so I resolved to remove the lens. Patient went to the hospital on November 1, 1916. The eye was thoroughly cocainized; the patient was then asked to look up, rolling the eyeballs up as far as possible. A knife needle was then pushed through the sclera, behind the ciliary body, and into the vitreous, catching the dislocated lens on its point and pushing the lens up toward the dilated pupil. The patient was then asked to look down, and while my partner, Dr. Simpson, held the knife needle I did the regular section for removing a senile lens. Then Dr. Simpson pushed the lens into the anterior chamber, and I took it through the opening which I had made, and not one bit of vitreous was lost, and the eye now has a 20-200 vision without glasses and is perfectly quiet.

Dr. Ellett spoke of the fact that the course of this case represents what happened in the eyes in which cataracts were "couched"—namely, that iridocyclitis caused the loss ultimately of nearly all of them, and the operation was abandoned. In this patient's eye the tension is greatly reduced and some degeneration of retinal detachment might yet occur, though the present result is excellent. The opacity in the pupillary space appeared to Dr. Ellett to be membranous, not lens matter. He had expressed himself as to the keratoconus when the patient was shown the first time.

Dr. Dulaney has seen but one case similar to Dr. Fagin's, and this was in a boy fourteen years of age. With each pulsation of the eye, lens would be thrown forward, as it was dislocated backward into the vitreous. Recently enucleated the eye, as same was injured, and resulted in panophthalmitis. Both eyes in this case are the largest he has ever seen in a human being.

Dr. Johns said that Dr. Fagin was to be complimented upon his result.

Dr. Savage wanted to know if there was any escape of vitreous.

Dr. Fagin, in closing, said that no vitreous was lost, lens came out easily, and the eye healed without giving further trouble.

CHRONIC GLAUCOMA.

Dr. Ellett presented a case of chronic glaucoma on which a LaGrange operation had been done. The history was a vague one of failing vision, the patient being a mulatto woman aged forty

years or more. Her mental status is indicated by the fact that she went blind without seeking any advice as to the cause of her trouble or its relief. O. D. Pupil dilated and fixed. Anterior chamber shallow. Very deep cupping of disk. Vision, perception of light. Tension, 130 (McLean) O.S. Exactly the same, with the addition of a mature cataract and no light perception.

The LaGrange operation was done on November 22, under local anæsthesia. The area of the wound is quite prominent, and through the conjunctival covering the scleral flap can be seen, as well as the defect caused by removal of the tip of the flap. A broad iridectomy was done to the root of the iris; the pillars of the coloboma are free and straight. The operation has the advantage over other forms of sclerostomy: (1) In that no new technic is to be learned, the steps being similar to that for cataract extraction, and the same instruments being used. (2) The conjunctival covering of the wound is not thinned by dissecting it off, and is quite substantial and offers the maximum of resistance to late infection. (3) A broad iridectomy, certainly an advantage, is easily secured. Since a visit to Professor LaGrange at Bordeaux, in 1910, Dr. Ellett has practiced the operation from time to time with gratifying results.

Dr. Fagin saw the woman at hospital. On examining eyes found marked cupping of the disc in right eye, but could not see disc of left on account of cataract. The result in this case certainly seems most gratifying.

Dr. Ellett, in closing, commented upon the fact that this woman lives here in town and has gone stone blind without trying to have something done, although there are two eye dispensaries within her reach. This case illustrates the need of missionary work among these people.

BUPHTHALMOS.

Dr. Ellett presented a patient with buphtalmos, on whom trephining had been done.

A negro baby, aged three months, was seen March 29, 1916, with the statement that the eyes seemed large. The cornea was hazy; right, 13 m. m. in diameter; left, 12 m. m. The fundus could not be seen distinctly, the balls looked larger than normal, and the tension was increased (fingers). Corneo-scleral trephining, with peripheral iridectomy, was done, under chloroform, on April 1. On April 22 the left eye was tre-

phined, with peripheral iridectomy by Dr. Stanford. While under the anæsthesia the tension was taken for the first time—O. D. 40, O. S. 100 (McLean). In September the child was put on mercurial inunctions, half a dram every night for two weeks, and then left it off for two weeks. The eye grounds can now be seen, the cornea having cleared. They are normal, and in particular there is no cupping of the discs. The tension is normal to the fingers, and apparently the disease has made no progress in eight months. If the case shows anything, it is the value of the operation done early, just as is the case in other forms of hypertonias.

Dr. Stanford said, in regard to the case just shown, that he had read an article last summer, published in the American Journal of Ophthalmology, on secondary glaucoma, by Dr. Charles Abadie. In this article the author states that infantile glaucoma is always secondary, and says that he has not operated on one of these cases in years. He says that he has cured all of them or arrested their development by a prolonged mercurial treatment. After reading this article, I put this child on inunctions of mercury, which he has used ever since. He has an inunction every night for two weeks, and then a two-weeks' intermission. It is too early to say whether or not any benefit has been derived from this treatment.

MALIGNANT TUMOR OF LARYNX.

Dr. Levy presented Mr. W. C., who, when first seen on October 8, 1916, gave the following history:

Has been hoarse the past three weeks, which was preceded by ordinary summer cold, as he thought. Since throat trouble has noticed hard lump on right side of same. Lately has had shooting pains—referred to right ear. Family history negative. Examination of throat showed marked hyperæmia of membrane, with a small, whitish area on anterior pillar.

Larynx showed marked congestion, with shaped deformity of epiglottis. General hypertrophy of membranes, and unable to get good views of cords. To right side of epiglottis could be seen a mass of tissue which presented a roughened area on top. On external surface of throat could palpate a large and firm mass on right side.

Wasserman and T. B. tests negative and blood

count normal (both red and white and differential counts made).

Treatment advised was X-ray, but same was refused. Gave Rx. Sat. Sol. K. I. in increasing doses.

November 3.—Throat seems worse, spitting up a little blood lately, and breathing with more difficulty. Pains to ear seem worse.

November 6.—Finally agreed to take X-ray treatment, and started on same.

November 7.—Mass in neck has now apparently disappeared. Voice a great deal clearer, although changes as seen by mirror not very marked on inside. Mass on either side of epiglottis seems less, but epiglottis about same as to form. Is still on Sat. Sol. K. I., and Dr. Lawrence is giving him large doses of X-ray filtered through 3 m.m. of aluminum.

Dr. Farrington would like to have this case shown again at some future time. It is interesting to watch, as X-ray and K. I. seem to have retarded the growth.

Dr. Ellett stated that there is now some radium in the city, and, should the tumor seem to resist X-ray treatment later on, might be well to consider use of radium.

Dr. McKinney stated that while in Pittsburgh he watched some cases that Dr. Jackson was treating with radium. Dr. Jackson was not pleased with the results. One of the cases shown was very similar to the one seen to-night. Saw this case some time ago with Dr. Levy, and the X-ray certainly seems to be retarding same. The question is: Should the X-ray be stopped? Will not the tumor recur? And if it is really an epithelioma, sooner or later the patient will die from same?

Dr. Levy, in closing, stated that potassium of iodide seemed to have made patient worse, and it is only since use of the X-ray that patient has been better, although Dr. Lawrence wanted the potassium iodide kept up. Dr. Lawrence had no radium at the time X-ray was started, and there was none in the city.

BURN OF THE EYELIDS.

Dr. Ramsey presented a boy about five years old with burns of lower and upper lids. The upper lid was completely gone, and there was a marked ectropion of lower. A small corneal opacity at lower margin, probably due to ulcer at time of burn. Marked purulent conjunctivitis. The case

is presented in order to get views as to best manner of treating same.

Dr. Fagin thought that upper lid could be improved with a plastic operation. Conjunctiva of lower lid suffering from exposure, due to ectropion.

Dr. Ellett asked Dr. Fagin what kind of operation he thought of doing.

Dr. Fagin, in reply, said he would have to study case out first.

Dr. Ellett said that the important point in this case is what kind of plastic to do. The boy has no skin on face or head that could be used. The best chance in this case will probably be the use of Tiersch's graft, as one gets a nicer result from this and it does not leave padded places like flaps of skin. The question also arising is: Will there be motion to eyelid, or would you have a complete ptosis? The lower lid will not be hard to correct.

Dr. Shea, in speaking of case, said that from the experience of the present war there seems to be quite a few papers written about plastic work done. Saw in one article where a new orbit was made. It might be well to look into these papers and from them get an idea.

Dr. Ramsey, in closing, said the case looked worse this evening, on account of patient having had no treatment during the day. Might derive quite a bit of benefit from an operation on the lower lid; for upper, had thought of doing Wolf's graft. However, this is the hard part of the case, and, as Dr. Ellett has suggested, you might give protection to the eye, yet have complete ptosis.

SPONTANEOUS HEMORRHAGE FROM THE EAR.

Dr. Shea reported the following case:

W. C. B., aged three, was brought to me for an acute ear, which I opened under gas anæsthesia on October 12, freeing a large quantity of pus. The case was seen daily by me, and the canal kept clean. Suction was gently used to drain the middle ear through the opening in the drum. When the child reported on the 16th for treatment, I noticed that the secretion was tinged with blood. That evening I was called by the mother to stop a hemorrhage from the ear. When I had cleaned out the canal, I found that there was a gentle flow, through the opening in the drum, of blood, which came steadily and was dark in color. I packed the canal with a fine tape, and the bleeding apparently ceased. Two

hours later I was again called back, and this time found a very free flow from the ear; the canal would fill up faster than it could be wiped out. It was necessary to pack the ear again, and to exert pressure with a mastoid bandage to stop the flow. The following day I gently removed the packing, and no further hemorrhage occurred.

The points of possible hemorrhage are: (1) *Membra Tympanum*, (2) *Internal Carotid*, (3) *Lateral Sinus*, (4) *Jugular Bulb*.

Membra Tympanum.—I could not find any knowledge upon so large a vessel in the drum or its immediate region.

Internal Carotid.—The flow was steady and dark in color and easily stopped by pressure.

Lateral Sinus.—This would presuppose a cavity of its wall with an ulceration of the sinus. But inasmuch as there were no mastoid symptoms, we can exclude the sinus.

Jugular Bulb.—The negative pressure exerted by the suction may have exerted pressure upon the thin wall of the bulb and started the trouble. The signs point to the hemorrhage as having been venous; therefore, I think that it was from this source.

Another interesting feature was that the blood clot in the middle ear hastened the condition. Whether this was due to the bactericidal action of the blood or not, is the question.

Dr. McKinney recalls a case that he had four or five years ago, in which the drum ruptured, and four or five days afterwards had profuse bleeding. Thought at that time it was from granulation tissue. Had to pack a number of times, however, before same subsided. When bleeding subsided, suppuration seemed to have immediately cleared up.

SECONDARY HEMORRHAGE AFTER REMOVAL OF ADENOIDS.

Dr. Savage reported the following case:

R. M. H., Jr., aged five, with history of repeated attacks of sore throat and mouth breathing and occasional attacks of earache, was operated upon by me October 31, at which time the tonsils were removed in capsule and adenoids were also thoroughly removed. The patient did nicely following the operation till the sixth day, when I was called over the phone and told the child was bleeding from both nose and mouth. On my arrival, thirty minutes later, I found the bleeding had about ceased, but the postpharyngeal space

filled with clot of blood. This clot was removed; and as it did not seem inclined to bleed any more, I left Rx 1-2000 adrenalin to spray through nostrils, should any more bleeding occur. The second night following—that is, November 8—was called at midnight, and found same condition as on previous visit. The child had been bleeding for three or four hours. Removed the clot from postpharyngeal space and put ice packs on bridge of nose. Absolute rest in bed for two days. There was no further trouble. At no time were tonsils bleeding—all was from where adenoids were removed.

FOREIGN BODY IN THE ESOPHAGUS.

Dr. McKinney reported the following case:

W. G., aged three years, was brought in by his parents with the following history: On August 28, 1916, child swallowed a five-cent piece. Repeated attempts had been made by their physician at home to shove same into the stomach, as the X-ray picture showed it near the cardiac end of the esophagus. These having failed, the child was referred to me. The following method was used in removing same: Under light chloroform anæsthesia, object was removed with long forceps, watching same under the fluoroscope.

LOUIS LEVY, *Secretary*.

LEADING EDUCATORS PRESS FOR PHYSICAL TRAINING IN PUBLIC SCHOOLS.

Adopting as its slogan President Wilson's recent statement that "physical training is needed, but can be had without compulsory military service," a committee of leading educators has been formed to press for the adoption, in the various states, of a "model" state bill, drafted by Dr. Dudley A. Sargent, of Harvard, providing for the introduction of physical training, without military features, in the public schools. The new committee, which bears the title of "*The Committee for Promoting Physical Education in the Public Schools of the United States*," has opened headquarters in the Munsey Building, in Washington, with Mrs. Harriet P. Thomas as Secretary in Charge.

The committee consists of Dr. John Dewey, of Columbia University; J. Y. Joyner, State Superintendent of Public Instruction, North Caro-

lina; Mrs. Ella Flagg Young, former Superintendent of Schools in Chicago; President David B. Johnson, of the Winthrop Normal and Educational College, of Rock Hill, S. C.; Carroll G. Pearse, of Milwaukee, President of the Milwaukee State Normal School; Mrs. Mary C. C. Bradford, of Denver, State Superintendent of Public Instruction of Colorado; Francis G. Blair, State Superintendent of Public Instruction in Illinois; Mrs. Josephine Preston, State Superintendent of Public Instruction in the state of Washington; and Dr. Sargent, the physical education expert of Harvard.

In its announcement the committee says, in part: "We believe that the time has come when the public schools can, and should, enter deliberately and purposefully upon a definite plan for the preparation of our youth physically for the exigencies of life and for all the demands of citizenship. We need to spend more money and time upon physical training intended to develop the body so that both boys and girls may be prepared equally for the pursuits of peace or the vicissitudes of war."

The bill is officially entitled, "A bill to upbuild national vitality through the establishment of physical education and training in the public schools of the state." It is described as a tentative draft which may be easily modified to meet the varying financial and educational conditions in the different states. Its proponents are careful to assert that they are not proposing to impose an "elaborate and expensive machinery" upon any state—merely to indicate the way to begin, in the belief that public opinion has now been educated to the point where it will support physical training in the schools, especially when that training is shorn of military features.

The bill, with suitable modifications, has been introduced in the Massachusetts General Assembly (by mutual consent) and in the Legislatures of California and Indiana. Its introduction in other states is expected to follow shortly.

WANTED.—A Location near Nashville, Franklin, Gallatin, Columbia, Murfreesboro, or Lebanon. Would like a practice in a good village of from 400 to 1,000, on or near railroad or trolley. Do not want to buy real estate, but will if suited for a permanent home. Address Editor of Journal of Tennessee State Medical Association, 349 Doctors' Building, Nashville.

BOOK REVIEWS

SECOND ANNUAL REPORT OF INTERNATIONAL HEALTH COMMISSION, Wickliffe Rose, Director General.

The International Health Commission is one of the units of the Rockefeller Foundation. Originally organized with two definite tasks assigned to it—coöperation with the United States and other countries for the relief and control of hookworm disease, and to help in the development of agencies for the promotion of public sanitation and the spread of the knowledge of scientific medicine—the Commission devoted its efforts during its first year almost entirely to hookworm disease. As is shown in this report of activities for the second year, the Commission has largely widened its field of operations until its health-saving service has gone into nearly all parts of the world, and until several of the most widespread diseases have come under the scope of its studies and its active and thorough preventive campaigns.

In the United States—the Southern United States—the Commission is working in coöperation with state Boards of Health in intensive community campaigns, the object of which is to sanitize as thoroughly as can be done every home and school in comparatively small areas which may then serve as object lessons to other communities. This particular work has accomplished a great deal in securing the application of preventive measures in rural districts in the South. This "community plan" has altogether taken the place of the dispensaries and other agencies utilized in former years by the International Health Commission and its predecessor, the Rockefeller Sanitary Commission.

A Yellow Fever Commission, with General Gorgas at its head, is one of the newer arms of the International Health Commission, which will endeavor to find and eradicate the foci from which yellow fever continues to send out its fatal influences.

Malaria is being attacked in one of its strongholds—Southern Mississippi; and while the Commission frankly states that the work against malaria is in a purely experimental state, it will no doubt be persisted in until something of practical benefit has been worked out.

Other activities of the Commission are covered by this second annual report, which is intensely interesting to any who are at all interested in preventive medicine.

AN INQUIRY INTO THE PRINCIPLES OF TREATMENT OF BROKEN LIMBS. By William F. Fluhner, M.D., Consulting Surgeon to Bellvue and Mount Sinai Hospitals, New York. Rebman Company, New York. 1916.

This is an essay in which is set out, sometimes at great length, descriptions of inventions of the author used in his treatment of fractures, and containing numerous references to the practices of days long gone. Some of it is interesting, in a way, and some of it is not. Much of it is elementary—or was, many years ago.

One quotation: "The guides for the correct adjustment of the fragments at the time of their immobilization are: the assurances of the touch, palpitation; the proper outline of the limb as disclosed by its uninjured fellow; and *possibly* [italics ours] the revelations of the fluoroscope or X-ray."

PRACTICAL MEDICAL SERIES. OBSTETRICS.

Vol. VII. 1916. Edited by Joseph B. DeLee, M.D., and H. M. Stowe, M.D. The Yearbook Publishers, Chicago.

This is a splendidly comprehensive review of the whole worth-while literature on obstetrical subjects. The editors have done their work with painstaking care, and the editorial notes, sprinkled so liberally throughout the volume, are of the greatest value.

THERAPEUTICS. PREVENTIVE MEDICINE.

Vol. VIII. 1916.

The section on Therapeutics in this volume of the Practical Medical Series is edited by Dr. George F. Butler, and is divided into three parts. Part I. deals with "Drugs," each drug discussed being taken up in alphabetical order. Part II. is a review of the year's literature on "Extracts of Animal Organs, Bacterial Preparations, Serums, and Vaccines;" while Part III. is given over to "Electricity, Röntgen Rays, Radium, and Radio-active Substances." The section on Preventive Medicine is edited by Dr. W. A. Evans, which fact insures the value of the work. The subjects discussed are varied and of present-day interest and importance.

THE MEDICAL CLINICS OF CHICAGO. Vol. II., No. 4. January, 1917. W. B. Saunders Company, Philadelphia.

This is perhaps the best number of the Chicago Clinics. The contributors are Abt, Beifeld, Case, Hamburger, Hamill, Mix, Portis, Strouse, Tice, C. S. Williamson, and Frank Wright. The subjects discussed have been chosen with the same good judgment which has been exercised in the past, and which has gone far to make the Chicago Clinics a very widely read periodical.

SODIUM CACODYLATE IN SYPHILIS.

While Nichols has shown that sodium cacodylate is worthless as a spirocheticide, it is still being used in the treatment of syphilis, and it is the essential constituent of venarsen, a proprietary syphilis remedy. As a result of extensive clinical trials, Dr. H. N. Cole concluded that sodium cacodylate has no spirocheticidal value. At the utmost, it has perhaps a slight action on the papular and nodular syphilids; but in no case is this

effect to be compared with that produced by mercury and potassium iodide. In cases of syphilis with mucous patches, sodium cacodylate is worse than useless.—Journal of American Medical Association, December 30, 1916, page 2012.

THE STATUS OF ANTIPNEUMOCOCCUS SERUM.

The injection of the proper antipneumococcus serum in pneumonia caused by pneumococcus Type 1 is believed to be beneficial, but the serum treatment of pneumonia is still in the experimental stage. The pneumococci fall into various groups, according to their immunologic relations, and the first requisite for a rational use of the serum treatment of pneumonia is the determination of the particular type of the pneumococcus concerned in a given case.—Journal of American Medical Association, December 30, 1916, page 2030.

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THE JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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WHO SHOULD OPERATE?

A PLEA FOR A MORE CAREFUL PREOPERATIVE STUDY OF OUR SURGICAL CASES.*

By C. P. Fox, M.D.,
Greeneville.

Thirty years ago, in the beginning of my professional life, there were no hospitals in East Tennessee. There were none except in the larger cities, and a surgical operation of any nature was rarely heard of. An occasional amputation, removal of surface tumor, draining an abscess, rarely a perineal lithotomy, constituted about all the surgery that was then undertaken in this section of Tennessee. The Johns Hopkins Hospital, which is now a household name throughout the South, was never heard of. The Mayos, Deaver, Murphy, and many other well-known surgeons were not known to the profession, not to mention the laity. It is true that we then had our Gross, Agnew, and Sims; but they were known only to the medical profession. I do not believe that it would be an exaggeration to say that there are more surgical operations performed now each day in East Tennessee than were then done in any of the larger cities.

I was then a medical student in New York City, and I remember that the bulletin of operations that would be posted at the Academy of Medicine for all the hospitals in the city would rarely amount to one dozen in any one day. Why is this remarkable increase in the number of surgical operations? Is it because of the great advancement of surgical technic—its perfection and its simplification? Is it because of the greater prevalence of surgical diseases—their easier and

earlier recognition? Is it the result of a higher standard of medical education and better equipment of the doctor? These are important factors in producing greater efficiency and in extending the scope of surgery. These are, however, not the only factors in bringing about this increase in the number of surgical operations. There are others of which we wish to speak.

A surgical operation, through commercialism in the profession, has become a cheap commodity. Anybody can have one, whether he needs it or not. If he cannot pay the price, he can get it at his own price. Anybody can do one if he can write "M.D." after his name, whether he is a surgeon or not. Commercialism is rapidly stealing from the profession of surgery its high and honorable tenets based on scientific study of surgical pathology and its scientific treatment, and is reducing surgery to a mere trade of human butchery. Any man who can write "M.D." after his name and holds a license to practice medicine is authorized to perform any kind of surgical operation he will undertake, provided he can get the consent of the patient, regardless of his qualifications, equipment, or his knowledge of anatomy or pathology. These are nonessentials, provided he has the bravado to undertake it. The result of all this is to commercialize surgery, and the man who will undertake an operation for the smallest fee or pay the largest commissions will usually get the case. The laity has little means of judging of the competency of the surgeon, and will usually take the advice of the family doctor. If, perchance, the family doctor should know of a surgeon who will pay him a large commission, for the sake of the dollar he will take his patient to the highest bidder.

Let us imagine a case, for instance. Dr A has a patient, Mrs. B, who has an attack of right-side abdominal pain, tenderness in the right ilio-lum-

*Read at the annual meeting of the Tennessee State Medical Association, Knoxville, April, 1916.

bar region, an elevation of temperature, perhaps vomiting. He makes a diagnosis of appendicitis, and he knows a Dr. C, who operates on any kind of case. He takes his patient to Dr. C, who concurs in the diagnosis without careful examination of the patient. Dr. C operates at once—perhaps at midnight or in the wee small hours of the morning. Like most thieves, his greatest successes are achieved in the darkest hours of the night. Perhaps he is afraid to delay—not in his patient's interest, but in fear that some other professional thief may steal his patient. The patient likely survives the operation, but gets no relief of symptoms. The pain and temperature continue; a tenderness and swelling appear in the right-kidney region. A urinary examination is made, blood is found in the urine, and it is then discovered that the patient had not appendicitis, but a surgical kidney. The surgeon got one hundred dollars for his operation, the family doctor got twenty-five dollars for referring the case. The patient has faced the dangers of an anæsthetic and a laparotomy, and has a surgical kidney for his consolation.

While this is an imaginary case, it has its parallel in real cases that are occurring almost daily under the observation of men who are doing conscientious work, whose highest motive is to relieve pain, to cure disease, and to prolong life; who undertake operation when operation is indicated, and then only in the interest of the patient.

In order to emphasize the principal idea of this paper, I wish to report briefly a few cases which have only recently come under the writer's observation and which are illustrative of the importance of carefully studying each case before advising operation.

CASE 1: A woman, twenty-four years of age, a stenographer, consulted me in reference to a right-side pain which she complained had troubled her for three years. Two years before she went to a doctor and told him about the pain. She told him she had a swelling in her right groin when standing, which disappeared when lying down. He did not examine her standing, but told her that she had trouble with her appendix, and advised an operation. He opened her abdomen and did some intra-abdominal work the exact nature of which she did not know. She made a fairly good recovery from the operation, but got no relief from her pain, and, on getting on her feet, observed the same swelling

in her groin. Examining her on her feet, I discovered that she had a right inguinal hernia.

CASE 2: Miss M., aged twenty-six, was brought to the hospital for a recurrent attack of abdominal pain, with constipation, vomiting, abdominal tenderness. Two years previously she had had an operation for appendicitis, but the attacks had been quite as frequent as before. On opening the abdomen, I found a diverticulum of the ilium within six inches of the cœcum. A resection was done, and the patient's symptoms were relieved.

CASE 3: Mrs. S., aged thirty-five, was taken with severe abdominal pain and vomiting. A tender mass appeared in the abdomen to the right of the umbilicus. A diagnosis of appendicitis was made and operation advised. The patient refused operation, and was brought to the hospital for examination. We suspected a hydronephrosis, and were preparing to do a ureteral catheterization, when the mass suddenly disappeared with a profuse flow of urine. The patient left the hospital with a diagnosis of nephroptosis, causing a Dietl's crisis. A binder was applied; and though two years have passed, she has had no recurrence of her pain.

CASE 4: Mrs. H. was taken with acute abdominal pain, vomiting, and abdominal tenderness. The pain was in the right side, and was referred in the direction of the bladder. There was constant desire to urinate. The doctors made a diagnosis of appendicitis and insisted on an operation. A vaginal examination showed a small mass in the right ureter close to the bladder. While examining the mass, it suddenly slipped into the bladder, and the pain was immediately relieved.

CASE 5: P. H., male, aged twenty-six, was taken with abdominal pain, vomiting, distension, chill; temperature, 104 degrees; pulse, 120. A diagnosis of appendicitis was made. He was brought to the hospital in my absence, and declined an operation until I could be consulted. Being absent from town, I did not see the patient for two days after the beginning of the symptoms. On examination, a tender mass could be felt in the right-kidney region. A urinary examination showed pus in the urine. The pain, rapid pulse, and tenderness continued; and within a few days a large mass could be made out, extending from the right hypochondriac region downward into the lumbar and iliac. A nephrec-

tomy was done, and a large pus kidney was removed.

CASE 6: Mrs. B., aged fifty, had complained of increasing constipation, with attacks of abdominal pain. While on a visit to her daughter in a neighboring city, she was taken with an acute attack of pain and vomiting. There was no special point of tenderness and no temperature. A doctor was called, and diagnosed appendicitis. The patient declined an operation; and, having been the family physician, I was asked to see the patient in consultation. On examination, there was no abdominal tenderness or rigidity, the abdominal muscles being lax, while a distinct peristaltic wave could be seen, which seemed to end in the left iliac region. Palpation disclosed an irregular mass in the left iliac fossa. On vaginal examination, this mass could be made out through the left broad ligament. A diagnosis of obstruction of the sigmoid was made. On opening the abdomen, a carcinomatous tumor of the sigmoid was found. Had the usual incision for appendectomy been made, this tumor would probably not have been found.

I might go on and report many similar cases in which a little time and sufficient study would have cleared up a cloudy diagnosis, in the first place, and a dangerous operation avoided or, at least, the proper operative procedure instituted. These reports show, however, that incompetent and unscrupulous operators are ruthlessly sacrificing human life in an ambition to do surgery or from pecuniary motives, thereby endangering the public health and degrading a great profession to the class of a mere trade.

Bold and skillful surgery done in the face of grave dangers to save human life and alleviate human suffering should rank the surgeon with the hero of the battlefield who faces the enemy's fire to save a nation's honor. But the butchery of the "operator," who disregards the patient's interest for the sake of a fee, should place him under the ban like the common criminal, to whose society he justly belongs.

The steps taken by the Council on Medical Education to standardize medical colleges and medical teaching was a long step in medical progress, and within a few years must show marked results in the way of improved medical

practice; but it seems far more important just now in the interest of humanity that something be done toward standardizing and regulating medical practice.

The work of the American College of Surgeons seems most commendable in its alleged purposes, but in its application and results so far has fallen short of its enunciated purposes. Contrary to its declared purpose of putting down fee splitting and commercialism, it has impeached itself by admitting to membership some of the very progenitors of these nefarious practices and by refusing membership to some of the most capable surgeons who have stood for and defended the highest ideals in the practice of surgery. It is not my purpose to arraign and condemn the motives of this august body, which can boast among its members the names of the most illustrious surgeons of America, but I would criticize any professional organization whose alleged policy is to elevate and uphold our professional tenets, but permits the selection of its members to be controlled by professional politics and personal bias, to the exclusion of men who have stood for the highest principles of ethics. It is to be hoped that this great organization will in the near future evolve a better and more just method of investigating the competency of its candidates for admission and will eliminate some of its unworthy. If something is not done ere long in the ranks of the profession to standardize surgical practice, it is our opinion that it will become a matter for state legislation. It has not been the purpose of this paper to condemn alone the incompetent operator, who might be easily eliminated by legislative enactment, which can provide for a competent board of examining surgeons, but to arraign another class of more or less skillful operators, who through competition have sealed their consciences to all the higher inspirations of a great profession and, controlled by avaricious and pecuniary motives, are groveling in the slums of commercialism. The great achievements of surgery should rank the surgical profession above all others, since the motives which have actuated its best men have formerly been, and should always be, born of sympathy for that class of humanity who, more than all others, should appeal to our highest instincts—namely, the sick.

DISCUSSION ON THE PAPER OF DR. FOX.

DR. J. B. HASKINS, Chattanooga: Dr. Fox has called our attention to a great problem, and I am sure he would be very happy if some one would solve it for him. Who should operate? That question can easily enough be answered; but, as he says, any man that has "M.D." after his name is permitted at the present time to operate if he so desires. I am sure you all see cases quite frequently that have been operated upon by incompetent men. This question of surgery, as we all know, is a large question. I feel that I have had a fair surgical training, yet I feel my incompetency when I am confronted by cases that humiliate me with my incompetency. This is one of the greatest questions that presents itself to the medical profession to-day—to know what to do with the surgical part of our profession. As the doctor said, we are not progressing toward the solution of the problem very rapidly; and it is humiliating when we who are trying to do honest, competent surgery see results in some cases that have been subjected to surgery.

It is not for every man to operate, because it takes special training, hard work, diligence, and perseverance for a man to do surgery.

DR. JOHN A. WITHERSPOON, Nashville: That is, indeed, a very important subject, and one that has been put before us by the essayist in a very forcible manner.

As to who shall operate, at this day and time there is, unfortunately, in every medical student's mind a desire to go into surgery. It is a big field that invites men, whether they be competent or not; and young men who are not equipped are taking human life into their hands and doing major surgery without proper equipment. We know that is true. I regret that that condition of affairs exists. I believe that every specialist should first be an internist. I believe that the greater surgeon will be the man who is the greater diagnostician. I have but little patience with the idea of making a surgical diagnosis. Where it is possible, the pathologic diagnosis should be made, and then a man should have special equipment and be specially prepared to handle human life with the scalpel in his hands. For my part, I do not hesitate to say that we should have greater practitioners and greater internists—men who are well grounded with accurate knowledge of the human body and of good anatomical and pathological training; and then let them become specially trained for this great work of surgery that is an honor to the century. Let them especially equip themselves for surgery. We know it is absolutely necessary to become specially trained, to become properly equipped, for surgical work.

The practitioner is not infrequently called upon to select a surgeon for a patient. It is not a question of what the patient wants, frequently, but great care needs to be exercised by the practitioner in selecting a fully competent surgeon who shall be intrusted to take hold of human life with that delicate precision that means safety.

As to the division of fees, I do not agree with the essayist about that. I know it occurs occasionally; but

I thank God I believe the surgeons of this country, as a whole, are too great and noble men to divide fees and take advantage of humankind in that way. [Applause.] I am not a surgeon. As I told the boys some years ago, I made my mistake early in life by having some unfortunate results; but I stopped just in time to save the rest. [Laughter.] The surgeons of to-day are not only striving for a high idealism in their work and for greater skill, but, as a class, they are a high type of men; they are honest men, who would not take a commission or divide fees; and while a few isolated cases may exist, as an internist I want to resent on the part of the surgical profession the charge of promiscuous division of fees. [Applause.]

DR. W. K. SHEDDAN, Columbia: This question of who shall operate is certainly one that is staring the American profession plainly in the face, and it is a question that the surgeons themselves are not going to settle; neither is the American College of Surgeons going to settle it. My opinion is that the only way in which the condition can be improved is for the good, capable, honest general practitioner to have more backbone and direct his patients to men whom he knows are capable and have had sufficient and proper training.

Mr. President and gentlemen of this association, there are but few men in the general practice of medicine to-day who have had a sufficient acquaintance with surgery, who have sufficient technical knowledge and sufficient special training, to equip them for the work which they undertake. Surgery to-day does not occupy as high a position in relation to the profession that the general practice of medicine does. We have no Grosses and Agnews and Eves of a few years ago, who by their general make-up were the surgeons of that day, as compared with the Flints and Loomises and men of that type. We have men who stand just as high and stand out as prominently and as brilliantly in general medicine as any of the men of that day, as Flint or Loomis or Da Costa or Stille or any of those great men; but have we these great shining examples of surgery to-day when it comes down to common honesty? Back in the older days we had such men as D. Hayes Agnew, Paul F. Eve, Richardson and Logan (of New Orleans), Brainerd and others (of Chicago), who would have scorned the idea that the prominent surgeons of this country stoop to. Those men would turn over in their coffins if they could see some of the practices of some of the prominent surgeons in this country. When a capable, honest, conscientious general practitioner of medicine turns his patients over to a surgeon, he should do so with the same care and the same thought as though he was going to be the victim of the surgeon's knife. I would not advise a patient of mine to go to any surgeon I would not willingly submit myself to. When you put yourself in that attitude, you are going to eliminate a great many of these modern butchers. There are thousands of men practicing surgery without any training for it, without the first principles of surgical training, who are blowing their horns loudly and attracting public attention; and I must say, to the shame of the profession, they are creating a following among the members of the general profession. I know men

to-day who are attempting to do capital surgery when they have not been properly and adequately trained for it. It has been done in this state recently. Some capital operations have been performed by men who have never spent an hour in a hospital, who have never sat on the benches and saw an operation done. I know of several cases in which capital operations of major magnitude have been undertaken by such incompetents, and the cases were referred to them by general practitioners who knew better, or ought to have known better. It is up to the general practitioner to take charge of this matter and eliminate that class of men from doing surgery. They may be your neighbors or your personal friends; but, gentlemen of the profession, that is no excuse for their doing surgery; and if we continue to do that, we will not improve the status of this condition.

DR. DEERING J. ROBERTS, Nashville: In looking back over the field for a great many years, I feel that I can say a few words on this subject. During the last quarter of a century surgery has achieved wonderful results. The glamor of the glittering scalpel and the rich financial rewards have drawn too many half-baked surgeons into the surgical arena. It is a gory field, it is an extensive field, and not glorious in many instances; but, sad to say, in some instances men have undertaken surgical operations who have not had the training they should have had, and these gory fields have been fields of sadness.

I fully agree with Dr. Witherspoon, and I have contended for years from observation and experience that all men cannot learn medicine in a medical college. I have claimed that for a number of years. One can learn how to learn both medicine and surgery in a medical school, but he has got to profit by the experience and observation he gains at the bedside. The surgeons, many of them, simply practice as an art and not as a science. It is both a science and an art. The man who is a surgeon once, I do not care if it be the amputation of a finger or the treatment of a fractured bone, an ordinary or major operation, is a physician twice while he is a surgeon once. He is a physician or general practitioner when he makes the diagnosis and prepares his patient and studies his case, understands the idiosyncrasies of that patient, and he is a surgeon when he performs the operation; and again the case should go back to him as a general practitioner for after treatment when he, as a surgeon, finishes the operation. Too many men have rushed into this brilliant field of late years without having had the opportunity to study cases at the bedside. The four years to-day in a medical college, even with the extra year of clinical work in a hospital included, are not sufficient to equip men fully for the magnificent, the wonderful and grand domain of surgery. It is very essential for him to get hold of cases where he has to depend upon his own judgment and thought and study out his cases, look at the different phases that the disease presents, for every case that presents itself is not surgical. He has got to consider more things than a mere butcher's art of cutting and slashing and sawing. There is something far more in surgery than that. Of all the good surgeons I have

known, while a few have set aside general practice after a few years, still I do not know of any really great surgeons in my whole experience of one-half of a century who have ever attained a high degree of proficiency and standing in their profession who were not well grounded in the principles of general practice before they began their work as surgeons. And it is the same way with regard to the specialties. The trouble is that when a man goes into surgery as a specialty of medicine, or in eye or ear work or in throat work, very frequently he is not as well equipped and as well trained as he should be. The trouble is that too many men commence to specialize before they are well grounded in the general principles of medicine, and they magnify their specialty too much. I venture to say that many patients who have undergone surgical treatment in the last ten or twenty years would have recovered under proper treatment without surgery.

DR. S. S. CROCKETT, Nashville: After I heard the gentleman read his paper, I thought that in a few minutes perhaps this meeting would be in the situation of the church sociable that was being held by a colored congregation. They were considering whether they should have a debate or not, and they had up the question of what was the most attractive part of woman. They were debating the eyes, the feet, and the hands; and somebody said: "We will adjourn this meeting, because some one will tell the truth directly and break up the whole thing." [Laughter.]

Now, Mr. Chairman, honesty and integrity are individual traits. Honesty and integrity are not confined or limited to a class either of surgeons or medical men. There are just as many honest surgeons as there are honest medical men. The fact that a man is a surgeon does not make him a sinner, nor does the fact of his being a medical man make him a saint. There are just as good men practicing surgery as there are doing anything else, and they are not hard to find. You can find them anywhere; you can find them everywhere. That has been my experience with them. It is not hard to find honest medical men. You find them everywhere, and you can find just as many rascals practicing internal medicine as you can find practicing surgery. But honesty is not the trait of a class. Honesty and integrity are individual traits. As long as there is a medical profession, men will be trying and striving and undertaking to do some things they cannot do. We all do it, and there is no use in trying to blame a class of men because some men are not trained to do the things they undertake to do. It is unnecessary to attribute to them dishonesty because they are trying to do something they cannot do. We all do that. We try to do things greater than we are doing to-day. That is not to a man's discredit. But what I want to protest against is in classifying people on the basis of honesty and saying that one class is honest and the other is not. I think you will bear me out in stating that you can find everywhere and almost anywhere men who are competent and men who are honest, who would not take a dollar from anybody unless they thought they were rendering an equivalent service. You can find such men any-

where among medical men and among surgeons who would not ask or suggest the question of division of fees.

I have been practicing medicine in Nashville; and if surgeons are dividing fees or giving commissions, they never mention it to me, and I do not know of a finer body of surgeons than we have in Nashville. We have there many industrious young gentlemen who are doing surgery, and doing it pretty well. They wear good clothes; they seem to get enough to eat; and they never show any of that unselfish practice which is manifest in other localities and divide with their medical brethren.

DR. G. P. ZIRKLE, Kingston: It is unfortunate that all men are not honest. We have in the medical profession a few men who are dishonest. We have some surgeons who are likewise dishonest. There is, or should be, an innate sense of right in every man's soul, whether he be a surgeon or physician. Any man who has the commercial spirit to such an extent as to crowd out that sense of right is not fit to serve people surgically or as an internist. I have often made the remark that when a man becomes a member of a lodge or secret order, it does not make a man out of him; that if he is a scoundrel before he belongs to a lodge, he will be a scoundrel afterwards. I very much fear that the same application can be made to medicine. I think doctors, as a class, the majority of them, are honest. They strive to serve the people, and they want to do it in an honest and upright way. It is a fact that some people fall a prey to these dishonest physicians and surgeons. When a young surgeon or young physician takes advantage of the ignorance of a patient in order to fill up his pocket, he is no longer worthy of the confidence of that patient. As knowledge becomes disseminated, as people learn to know more of the physician's work and the work of the surgeon, as the physician becomes better acquainted with the ills of the people, and as the surgeon's view becomes broader, I think this matter of commercialism will be left in the background. Let us hope this will be true. We are all striving to do the best we can for the people. It is our chosen work in life. It is to aid suffering humanity; and when we stoop to commercialism, when we stoop to that low level of taking advantage of our patients who trust us, we are no longer worthy of the confidence of those patients, and we should not encourage this either in surgery or in internal medicine. We should not be guilty of these things.

DR. C. P. McNABB, Knoxville: This is a surgical topic up for discussion by medical men, and it seems we are somewhat out of place, as we should let the surgeons discuss it. Dr. Fox mentioned commercialism as one of the causes of young men's engaging in surgery and of a great many operations being done by incompetent men. I do not believe commercialism enters into the doing of surgical operations by young doctors to the extent that it would appear to some. Young men go out from our medical schools with a knife up the sleeve—not from improper motives, but by doing a single operation they can start practice much earlier. Consequently a great many of them want to go into surgery.

It is an inviting field. It is something the people talk about, and that is why young men go into surgery who ought not to go into it. It is not for money, but for the reputation they hope to make out of it.

As to fee splitting, I know nothing about it, and do not feel able to discuss that phase of his subject. Dr. Fox does good surgical work; and if I sent a case to him for operation, I would not expect that patient or the doctor to give or offer me a cent.

As to qualifying a surgeon to do good surgery, Dr. Witherspoon has said that a man is far more capable of becoming a good surgeon if he is a first-class internist in the first place. I do not believe it. Some of the best operators I know are the poorest diagnosticians I ever saw. I believe the day has come, or will soon come, when the schools should teach the fundamental principles of medicine in the first and second and third years, and then from that time on time should be devoted entirely to preparing those who desire to be surgeons or specialists in the line of their choice. They should be given surgical training; they should be taught practical surgery; they should be taught the diagnosis of surgical conditions and how to operate. These men, when they are called to see patients, should be capable of deciding what is a surgical case and what is not; and when they find a case that is surgical, they should operate; and if it is a medical case, refer it to the internist. The internist should be educated to make diagnoses and to treat disease in the proper manner. The eye, ear, nose, and throat men should be taught from the second year on to do the kind of work in which they are interested. The important point is that the surgeon should be educated for surgery and the internist should be educated for internal medicine. No man can master the whole field of medicine. He cannot be a good physician and a good surgeon; for just as a surgeon does poor medical work, so a medical man cannot do good surgery. Let us divide the thing. Let us educate our boys right, and we will hear less complaint about commercialism, fee splitting, etc.

DR. C. P. Fox, Greeneville (closing): I am sorry to detain you longer, but I want to correct some impressions which, if I can judge from the trend of the discussion, have perverted the real idea of the paper. Although I have the reputation of speaking plainly, I must censure myself for not being able to make clear the ideas I wished to convey.

In the first place, I asked the question, "Who shall operate?" In answer to that question I tried to make a plea for a more careful preoperative study of our surgical cases.

I was inspired to write this paper because I frequently have surgical cases referred to me in which I am urged to operate on the day that the case arrives at the hospital. The doctor referring the case may be more capable of making a diagnosis than myself. I am fully conscious that there may be many general practitioners that may be better equipped to make a diagnosis than myself. If, however, a mistake is made in the operation, the responsibility rests on me. I, therefore, make it a rule to study every case carefully unless the diagnosis is distinctly clear. The point I want to make

is this—and I know it is being done in every hospital in this country—that doctors are taking patients and are expecting surgeons to operate on them the same day or the next day, with scarcely any examination having been made on the part of the surgeon. He has not convinced himself as to the diagnosis, and he is likely, therefore, to do an operation that is not indicated. In many cases referred to me my first impression was, after seeing the patient, that he or she, as the case may be, needed an operation; but after a careful study of the case, I was convinced that if I had acted on my first impression I would have done the wrong thing. In my paper I have given illustrative cases to prove it, and these cases occur almost every day. I want, therefore, to make the appeal that no man should operate on a case, unless it is an emergency case with a positive diagnosis, without thoroughly studying his patient. I did not condemn the surgical profession, and I am somewhat surprised that Dr. Crockett should have misinterpreted the spirit of my paper in charging me with condemning the surgical profession as a whole. I believe to-day that surgery has advanced more than any other science, and I regard the men who are at the head of the profession in surgery, the men I have mentioned—as the Mayos, Deaver, Murphy—and many others too numerous to mention, as great men. Such men are the equal of any of the surgeons who have ever lived. It is not that class of men to whom I had reference. I make a distinction between the surgeon and “operator.” I prefer to call a man who rushes into an operation without considering his patient an “operator” rather than a surgeon. There are too many men engaged in surgery who are incapable of operating. They have not had sufficient training and sufficient experience, and they are doing operations that are not only useless, so far as the cure of the patient is concerned, but they are endangering the life of the patient. I could go on and elaborate more fully what I have said, but I especially want you to get the idea that I am not condemning the surgical profession.

With reference to fee splitting, probably it is a little more common than some of you admit. I am somewhat surprised at the medical side of this house in discussing this question. I only hope the shoe does not fit any one, but I want to tell you that I have had numbers of instances in which men have brought patients to me and would say to me: “Doctor, what do you get for an appendix operation?” Well, I get \$100 if the patient is able to pay it. “How much do you give the man who brings a patient to you?” A practitioner recently said that to me. And these are not always the little men in the profession, so far as reputation is concerned. I do not pay a doctor anything who brings a patient to me. This practitioner said: “I take my patients to Knoxville and to Bristol, and I get a fee of so much. I get \$25. Can’t you charge the patient \$75 and give me \$25?” I replied: “No, sir. If this patient is able to pay me for my operation, well and good; but if he is not able to pay me, I will do it for nothing. And you charge him \$100 if you like. That’s your business.” I am perfectly willing to do an operation for nothing, and I might say here that fifty per cent of my surgery is done without a fee. I do not ask the family whether

they have got any money or not. I am perfectly willing at any time for a doctor who refers his case to me to collect his fee and do without mine, but I am not willing to buy a patient from that man by offering to give him a fee for referring the case to me. That is what I mean by “commercialism.”

You may try to smooth this thing over and say it is not being done; but since I have been doing surgery, I have found that the division of fees is more common than is generally supposed. But there are doctors who have respect enough for their profession to decline to split fees. They are to be commended for it. Whatever the condition may be in other sections, I can say very candidly that it is not an unusual practice through this section of the country for a man to pay for his patient.

SLIDING HERNIA, WITH REPORT OF FOUR CASES.*

BY CHARLES G. McMAHON, M.D.,
Chief Surgeon, Tennessee Copper Company Hospital,
Copperhill.

Binnie defines sliding hernia as a hernia of the large intestine, in which that portion of the parietal peritoneum to which the viscus is attached (with or without meson) slides down and forms part of the sac.

It was first accurately described by Scarpa in 1812. Although it is rather uncommon, its recognition when present during operation is of extreme importance. If unrecognized, not only will much difficulty be encountered, but also the viability of the bowel may be seriously jeopardized.

FREQUENCY.

Judd, in a paper covering a series of 1,653 herniotomies at the Mayo clinic, mentions fourteen cases of sliding hernia. Davis reports seven cases in 1,500 herniotomies at the Massachusetts General Hospital. Moschowitz states that the condition is more common than the number of cases reported would indicate. He ascribes this fact to one of two reasons—either the hernia does not excite sufficient interest in the operator to justify reporting, in his opinion, or (and he says this is more likely) the operator does not like to be reminded of a disagreeable experience. I asked an eminent surgeon in one of America’s leading surgical centers concerning the frequency

*Read by invitation before the Knox County Medical Society, November 28, 1916.

with which they encountered the condition in their large series of herniotomies, and he replied: "Much oftener than we like to."

TYPES.

Moschowitz, in a splendid article, describes two types of sliding hernia. One he designates as sliding hernia due to a pulling mechanism, and the other type he describes to a pushing mechanism. This classification seems eminently practical to me, and has been borne out by my own very modest experiences with the condition.

Briefly, the types have the following features:

Types due to pulling mechanism:

1. Large-sized hernia.
2. Sac readily found.
3. Piece of intestine that cannot be reduced.
4. Deficiency of posterior portion of sac, with viscus firmly attached to an area comprising some two-fifths of the circumference. If this condition is not promptly recognized and adequately dealt with, the lumen of the gut may be perforated by misguided efforts to break up supposed adhesions; or, worse yet, the blood supply may be so impaired that gangrene results and a perforative peritonitis follows.

Characteristics of sliding hernia following a pushing mechanism:

1. Very small hernia.
2. No sac found, despite repeated search at the usual site.
3. Bulging posteriorly and to the outer side of the cord when the patient strains or coughs while reacting to the anæsthetic.

The vital factor in these cases is prompt recognition; otherwise the lumen of the gut may be entered in boldly incising what the operator mistakes for hernial sac. When recognized, the hernia can readily be reduced into the retroperitoneal space by a little blunt dissection. After reduction, deep sutures are passed, being careful to hold the gut replaced during the process of tying.

Either type may be left or right inguinal or femoral.

OPERATION.

When this condition has been recognized, the operation must fulfill the following conditions:

1. The herniated intestine must be freed sufficiently to permit of adequate reduction.
2. The bowel must not be injured during the process.

3. The blood supply of the bowel must be conserved, and an artificial mesentery must be constructed to protect it.

Various types of operations have been devised to attain these ends. Hotchkiss splits the sac well down the front to allow of replacement, forms a sort of mesentery from the resulting flaps, and closes the remainder of the opening by a purse-string suture.

Moschowitz makes a free incision down the anterior wall of the sac, separates the sac from the cord, searches out the line of cleavage, and, by gentle dissection, proceeds until the hernial sac and the herniated bowel, with its blood vessels uninjured, are lifted up from the posterior wall of the hernial space. He then holds the intestine and sac up perpendicularly, allowing the sac to fall over the nutrient vessels on both sides. He fastens the sac in position by a few interrupted sutures over the vessels, forming an artificial mesentery. He then closes the sac by a running suture and completes the radical cure in the ordinary manner.

Ransohoff frees the sac, divides it freely anteriorly, and separates a strip of the sac to use as a cover for the internal ring, leaving it attached to the peritoneum, covering the internal aspect of the ring. He then unites the attached flaps of the sac by running a suture on the posterior surface of the bowel, reduces the bowel, sutures the prepared peritoneal flaps over the internal ring, and completes the operation according to the Bassini method.

Walton frees the sac from the cord, opens it anteriorly to see the relation of the contents, splits the posterior surface to within one-half inch of the contained bowel, and then divides the sac along either side of the bowel as far as the internal ring. He pulls forward the bowel, sutures the peritoneal flaps over the posterior surface, brings the edges of the divided sac together, and invaginates by the Kocher method. He then proceeds with the regular curative operation.

Walton has also devised a similar method of dealing with the bladder when found adherent to the hernial sac, with the exception, of course, that the bladder is replaced in the space of Retzius, after being freed from the sac.

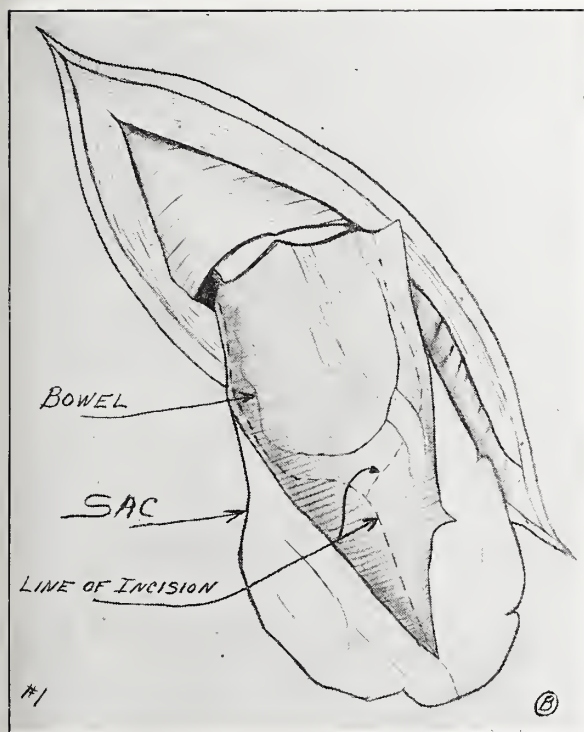
Fiaschi supplements the ordinary sliding hernia operation by anchoring the herniated bowel

(after reduction) to the abdominal wall through a muscle-splitting incision.

Moschowitz also reports a case in which he adopted a similar method. In any of these operations more room may be required than can be obtained by the ordinary hernia incision. This may be obtained by splitting the internal oblique above the internal ring, performing a hernio-laparotomy.

CASE REPORTS.

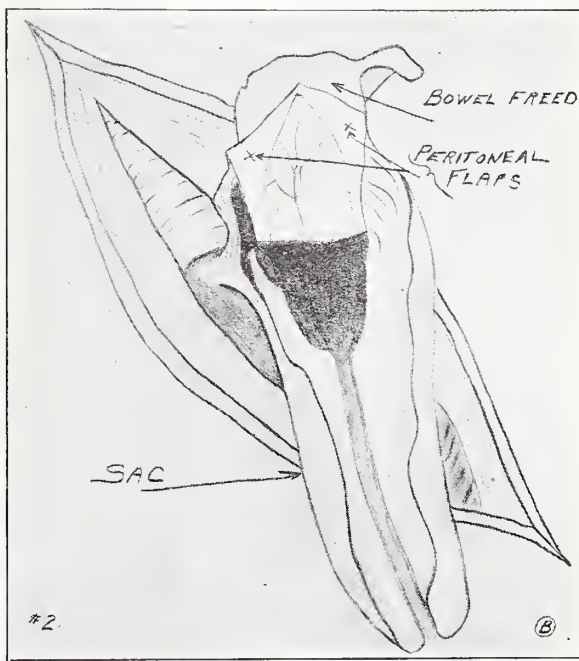
No. 1: This case was operated by the writer at the Adams Hospital, Hibbing, Minn., while assistant surgeon there in April, 1910. Case referred by Dr. Cummings, of Hibbing. Patient, M. A., forty-five, laborer, of alcoholic tendencies. History of hernia of ten years' standing. On recovering from a spree lasting three days, patient found hernia very painful and irreducible. Examination showed a large hernial mass, extending into the scrotum, hard, tense, and ex-



No. 1 shows anterior wall of sac opened and herniated bowel adherent to posterior wall. Dotted lines represent line of incision in order to show relationships. An excessive amount of the anterior wall has been removed. (After Walton, "Annals of Surgery.")

tremely painful. Operation, ether anæsthetic. Bassini incision revealed a sac constricted at the internal ring. Sac cautiously opened, and adherent large intestine found on the posterior wall.

No evidence of gangrene. Sac was freely split anteriorly, a hernio-laparotomy performed, and contents of the sac treated and reduced by the Hotchkiss method. The incision in the internal



No. 2 shows bowel freed and peritoneal flaps ready for suture. (After Walton, "Annals of Surgery.")

oblique was then repaired, and the radical cure completed by the posterior imbrication method of E. Wyllis Andrews. Recovery was uneventful, and a report received from the man several months later said that he had no further trouble and no signs of recurrence.

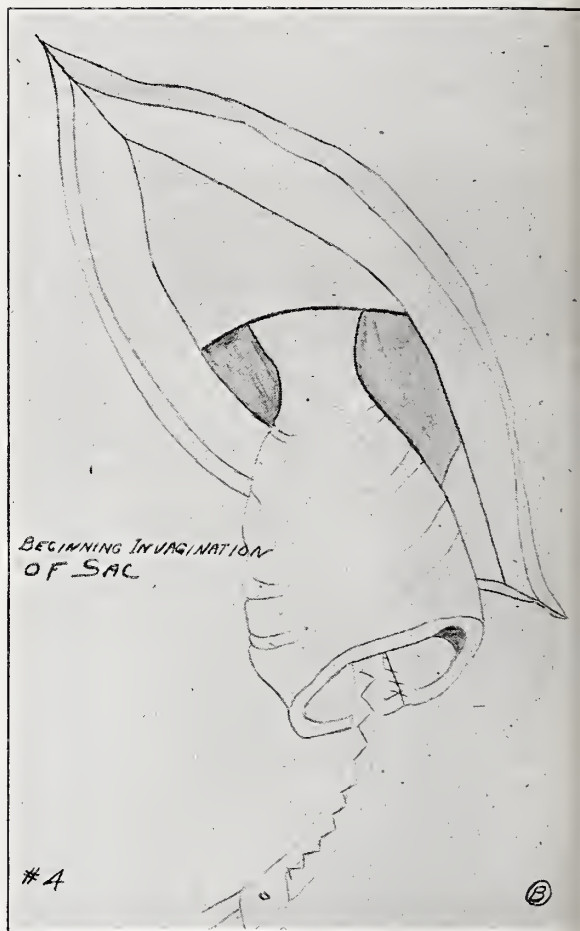
HERNIA OF THE RIGHT INGUINAL TYPE.

No. 2: Patient, M. A., twenty, operated at the Tennessee Copper Company's Hospital in April, 1914. Left inguinal hernia, recurrent after a previous operation one year before. Recurrence of eight months' standing. Ether anæsthetic. Bassini incision; some difficulty in exposing landmarks, owing to cicatrization following previous operation. Canal found well closed except at internal ring. Sac freed and isolated. On opening, large intestine was found attached to the posterior surface. Sac was split to the internal ring, a line of cleavage found, and the bowel freed after the Moschowitz method. Separation was fairly easy, and the blood vessels were not injured. An artificial mesentery was formed by attaching the sac by a few interrupted Pagen-

stecher sutures in the position in which it naturally fell over the bowel when both were held up perpendicularly. Remainder of the sac was closed by running suture, and cure completed by Andrews' anterior imbrication method. Recovery uneventful, and examination two and one-half years later showed no signs of recurrence.

No. 3: F., operated at Tennessee Copper Company's Hospital, December, 1914. Small incarcerated femoral hernia on right side. Pain in the epigastrium and vomiting for a few hours. Good results from enemas and no pain in hernial region, but operation advised and accepted because of the danger of incarcerated hernia in this region, owing to the unyielding nature of the structures of the femoral ring. Operation, ether anaesthesia. Incision parallel to Poupart's ligament over center of the hernia. Small lipoma first encountered. This was carefully separated, and revealed a protrusion through the femoral ring. It seemed too thick and red for peritoneum, and showed a few small injected blood vessels on the surface. The mass was the size of a small hazelnut. In order to obtain room to establish the exact anatomic relations, Poupart's ligament was

space, and a small portion of its lateral wall had pushed through the femoral ring and become incarcerated. As there was no evidence of im-

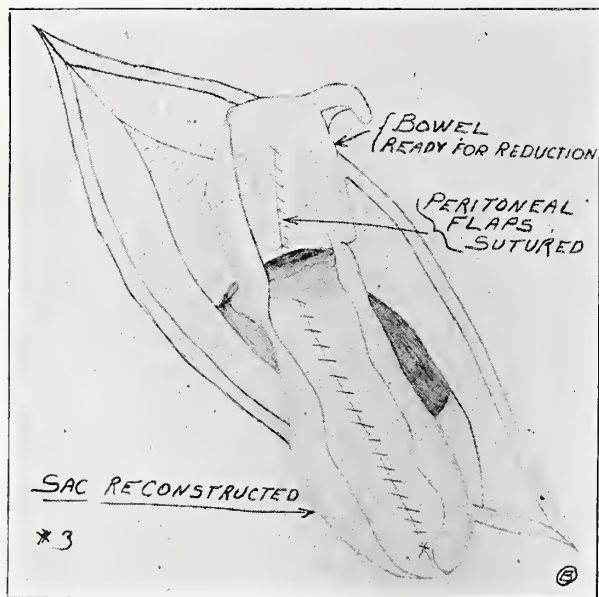


No. 4 shows bowel has been reduced and invagination of sac is begun according to Kocher's second method. This is followed by completion of the operation by the Andrews or Bassini method. (After Walton, "Annals of Surgery.")

pairment of the circulation in the constricted portion and communication was readily established between it and the main lumen, it was reduced; and after repairing the incision in Poupart's ligament, the ring was closed by the Bassini method.

This was an excellent example of Moschowitz's hernia by pushing mechanism, as well as of the so-called "Richter hernia." There was absolutely no sign of any sac. Patient shows no evidence of recurrence eighteen months after operation.

No. 4: M. A., seventy-three, laborer, operated at Tennessee Copper Company's Hospital, September 7, 1916. Left inguinal hernia that could not be held by truss. Some hesitancy about advising operation because of advanced



No. 3 shows peritoneal flaps sutured and bowel ready for reduction. Sac has been reconstructed and is ready for invagination. (After Walton, "Annals of Surgery.")

incised at right angles some distance from the ring, and a little very careful blunt dissection revealed the nature of the hernia. There was a portion of large intestine in the retroperitoneal

age; but heart arteries and kidneys were in excellent condition, and he was extremely rugged. Furthermore, he was seriously handicapped in regard to earning capacity, and was exposed to the danger of the hernia becoming strangulated in some isolated labor camp where he might die before he could be gotten to a surgeon. In view of these facts, operation was advised and accepted. Operation, ether anæsthesia, iodine preparation. Andrews' incision; sac separated from cord, and, upon opening, large intestine found protruding from internal ring and firmly adherent to sac. Large intestines readily recognized by longitudinal band. The sac was split freely anteriorly; flaps were formed by the Walton method and sutured over the posterior surface of the herniated bowel. The intestine was easily reduced, the remainder of the sac closed by a running suture, and the radical cure completed by the posterior imbrication method of E. Wyllis Andrews. The cord was thinned considerably by removal of some adherent fat. In spite of his advanced age, the patient took the anæsthetic nicely, had an uneventful recovery, and has resumed work. Examination last week shows an absolutely perfect result.

CONCLUSIONS.

No. 1: Sliding hernia should always be kept in mind when any difficulty is experienced in reducing the contents of the hernial sac.

No. 2: The chief danger in the condition lies in not recognizing it promptly.

No. 3: Large intestine can be recognized by the epiploic appendages and longitudinal bands. When the intestine appears to be adherent in a hernial sac, careful search for these will make the diagnosis clear.

No. 4: When the hernial sac is not readily found in the usual position, or when it appears unusually red or thickened, the operator should think of sacless sliding hernia and proceed very cautiously until he has his anatomical relationships established.

No. 5: Every man who may be called upon to operate in an emergency should familiarize himself with this condition. Two of our four cases were operations not of choice, but of absolute necessity.

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A CASE OF SYPHILIS OF THE LUNG, WITH RESULTS OF TREATMENT AS SHOWN BY THE X-RAY AND PHYSICAL SIGNS.

By JOHN A. WITHERSPOON, M.D.,

Professor of Medicine in Vanderbilt Medical School,
Nashville.

The manner of presenting this case needs some explanation. In our teaching work in medicine in the Vanderbilt Medical Department, we assign cases to two or three senior students. They work up the case entirely—history, physical signs, laboratory tests, etc.—and, when they have made a diagnosis, are called upon to present a statement of their findings to a section of the class at a regular clinic hour. Members of the staff are present to comment and to encourage discussion. This case is so presented. For the presentation of the case we are indebted to Messrs. Pilkerton, Henderson, and Henderson, of the Senior Class, and desire to commend them for their thorough work.

JOHN GRESHAM, NASHVILLE, TENN.—AGE, 56;
COLORED; MALE; LABORER.

November 7, 1916.

Family History.

Father died of paralysis of left side.
Mother died at menopause.
Two brothers living.
One brother died in infancy.
One brother died of typhoid.
One brother died of malaria.
Four sisters living.
Three sisters dead.

Previous History.

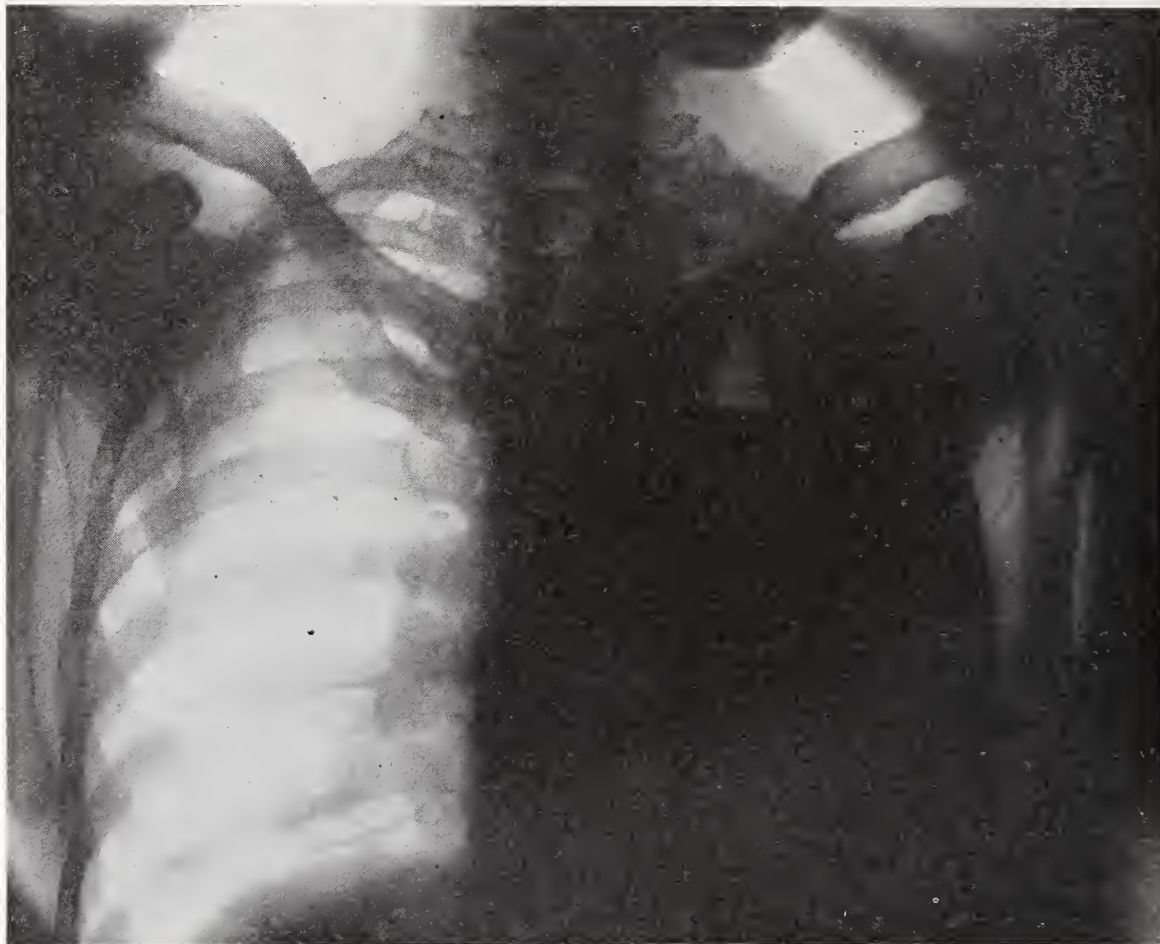
Patient is a laborer; has drunk whisky moderately; has had all diseases of childhood; had pneumonia eight years ago; rheumatism, twenty-eight years ago; malaria, thirty years ago; usual weight, 150 pounds. Patient had gonorrhoea twenty years ago and syphilis twenty-eight years ago. At times he has suffered pain, which began under the right clavicle and radiated out the right arm. Patient says he has had attacks similar to this one for

the last ten or twelve years. At Denver, Col., and Birmingham, Ala., he was interned for this same trouble, and was tapped several times at each place, but each tap was dry. The patient noticed blood in his urine several weeks ago, which persisted for several days.

Present History.

Several days ago the patient got his feet wet, and worked all night with wet feet. The next day he had a

palpable. Tongue slightly coated and protrudes in median line; no tremor. Some teeth gone, moderate pyorrhea, throat red, tonsils not enlarged, no pulsations about the neck. Arteries palpable; pulse, 88. Heart enlarged to the left, precordial thrill, apex seen and felt one-half inch outside of midclavicular line in sixth interspace. There is a systolic and presystolic murmur heard best at the apex. Pulmonic second sound accentuated. Trachial tug present.



No. 1.—Syphilis of the lung (Witherspoon).

cold, numb feeling, but no chill. A cough developed, with expectoration, in which he noticed some blood. He had some trouble in controlling his water, passing it drop by drop. Also at times he has difficulty in erection. At the present time the patient complains of a dull, aching pain in his left leg, which he describes as being in his muscles and tendons.

November 11, 1916.

The patient is a fairly well-nourished negro, male, fifty-six years old. Scalp negative. Mucous membranes of eye cloudy. Arcus senilis present. No discharge from eye, no nystagmus nor strabismus; sight good. No discharge from ears or nose. Patient hears well. Other cranial nerves O.K. Post-cervical glands

Physical Examination of the Lungs.

Inspection: On deep inspiration, right lung expands, but left lung immovable. There are four distended veins upon chest. Respiration, 24.

Percussion: Right lung hyperresonant; left lung flat all over except in upper part in front, where impaired resonance is gotten.

Palpation: Fremitus present on right side, but absent all over left side.

Auscultation: Increased breath sounds in right lung; no breathing at all in left lung, except tubular breathing high up in outer portion of axilla. Whispered voice gotten in upper part of back near spinal column.

Lung was tapped in eighth interspace in scapular line, but no fluid obtained.

Abdomen: Normal appearance, slight tenderness and some rigidity. Liver not palpable. Stomach normal in outline. No bulging of the flanks.

Kidneys: Not palpable; no pain there.

There are a few white-looking spots over shin. Bones and joints negative. Muscles somewhat atrophied, especially of legs. Inguinal and epitrochlear glands palpable. Genitals normal. Knee jerk absent. Babinski indefinite.

X-ray: An X-ray was made of this patient's chest, and a shadow was shown all over left lung, except apex.

Wassermann: Blood was taken for a Wassermann, which was + + + +.

November 28, 1916.

Physical Examination of the Chest.

Inspection: On deep inspiration, right lung expands, but left lung remains immovable. Few distended veins on upper chest. Respiration, 20.

Pulsation: Slight fremitus felt in back on left side.

Percussion: Right lung hyperresonant, left lung dull all over.

Auscultation: Increased breath sounds in right lung. No breath sounds at all in lower part of left lung. Tubular breathing in left axilla; diminished breath sounds in left apex. Whispered voice is gotten slightly in upper part of back on left side.

X-ray: Showed shadow over left lung to be clearing, and outlines of heart could be made out.

Diagnosis.

Pleurisy, with massive effusion left chest. Aspirated several times; no fluid.

CLINICAL PATHOLOGY.

Urine.

November 10, 1916.

Color,	Amber
Sp. gr.,	1028
React.,	Acid
Albumen,	Negative
Sugar,	Negative

Microscopic Examination: Urates and epithelial cells found, but no casts.

Blood

	Nov. 11, 1916.	Nov. 15, 1916.	Nov. 28, 1916.
W.B.C.,	13,200	12,000	7,800
R.B.C.,	5,600,000	5,400,000	5,100,000
Haem.,	95%	95%	95%
Bl. Pres.—			
Syst.,	195	120	110
Diast.,	55	65	60
Wassermann,	+ + + +		

Sputum.

Nov. 11, 1916.	Nov. 15, 1916.	Nov. 28, 1916.
Negative.	Negative.	Negative.

X-Ray Findings.

November 15, 1916.

X-ray showed shadow all over left side, except apex.

November 25, 1916.

X-ray showed shadow to be clearing.

CLINIC No. 1.

(By Dr. J. A. Witherspoon.)

You have heard the history of a very interesting and rare case. This man, aged fifty-six, comes to us with a history of repeated attacks for the past twelve years, which suggested pleurisy, with effusion on the left side. He has been tapped with negative results in many cities.

We find a poorly nourished negro man, with face drawn and pinched, showing suffering. The most suggestive symptom is shortness of breath, aggravated on the slightest exertion or muscular effort. The temperature varies from 99½ in the morning to 101 in the evening. The pulse is hard and corded with high tension, but regular. The heart shows hypertrophy of left ventricle, a sharp accentuation of the aortic second sound, and systolic and presystolic murmur. These findings, with a blood pressure of 185, with other evidence of general arteriosclerosis and an increased aortic area. The trachea was drawn to the left, and a distinct tracheal tugging could be elicited. While he has aortitis, with beginning aneurysm, the principal cause of his dyspnoea is the condition of the left lung. The thorax is nonexpansive, with retracted intercostal spaces. We find on inspection that the heart is displaced to the left, with a friction sound to the left of the left nipple, evidently due to adhesion of the pleura to pericardium. On palpation we have complete absence of both tactile and vocal fremitus from apex to base, except for a small spot at the angle of the scapula. Percussion is flat over the entire side and all breath signs are gone, except in the left axillary region, where tubular breathing exists in an isolated spot about two inches in diameter. The X-ray picture, as you see, is that of complete absence of all air spaces—in fact, of a large and complete effusion from base to apex. We would naturally, as has been done on many occasions, diagnose a pleurisy with a large effusion, with these physical signs and other symptoms; but, in view of the following points, I think we can exclude an effusion:

1. The recurring attacks, with repeated dry taps.

2. The displacement of heart and trachea to left, when, as you know, with such a massive effusion, the heart should be displaced far to the right. Again, the tubular breathing in the axillary spot and increased fremitus in the angle of left scapula, with these negative findings, together with the facts brought out by the history—viz., a four plus Wassermann following a history of

the testes, liver, and stomach being involved next and the lung showing peculiar immunity; yet we do know that it is not uncommon in children in what is called the "white pneumonia." It does occur in the adult, beginning usually at the hilus of the lung, following the course of the bronchi and blood vessels, producing a fibroid lung, with infiltration of the lobules and interstitial sub-



No. 2.—Syphilis of the lung (Witherspoon). Two weeks after treatment was begun. Same case as in No. 1.

syphilis eighteen years ago, and three negative Tb. sputa tests—would, to my mind, suggest a diagnosis of syphilis of the left lung. This lesion is very rare in the adult and rarely found invading the entire lung. Osler reports only twelve cases found in 2,800 post mortems in Johns Hopkins; and out of 3,000 cases of post mortems of lung cases in the Massachusetts General Hospital, not a case of syphilis of the lung was found. We know that syphilis has a predilection for the heart and blood vessels, especially in this race, where it is so prevalent and always badly treated,

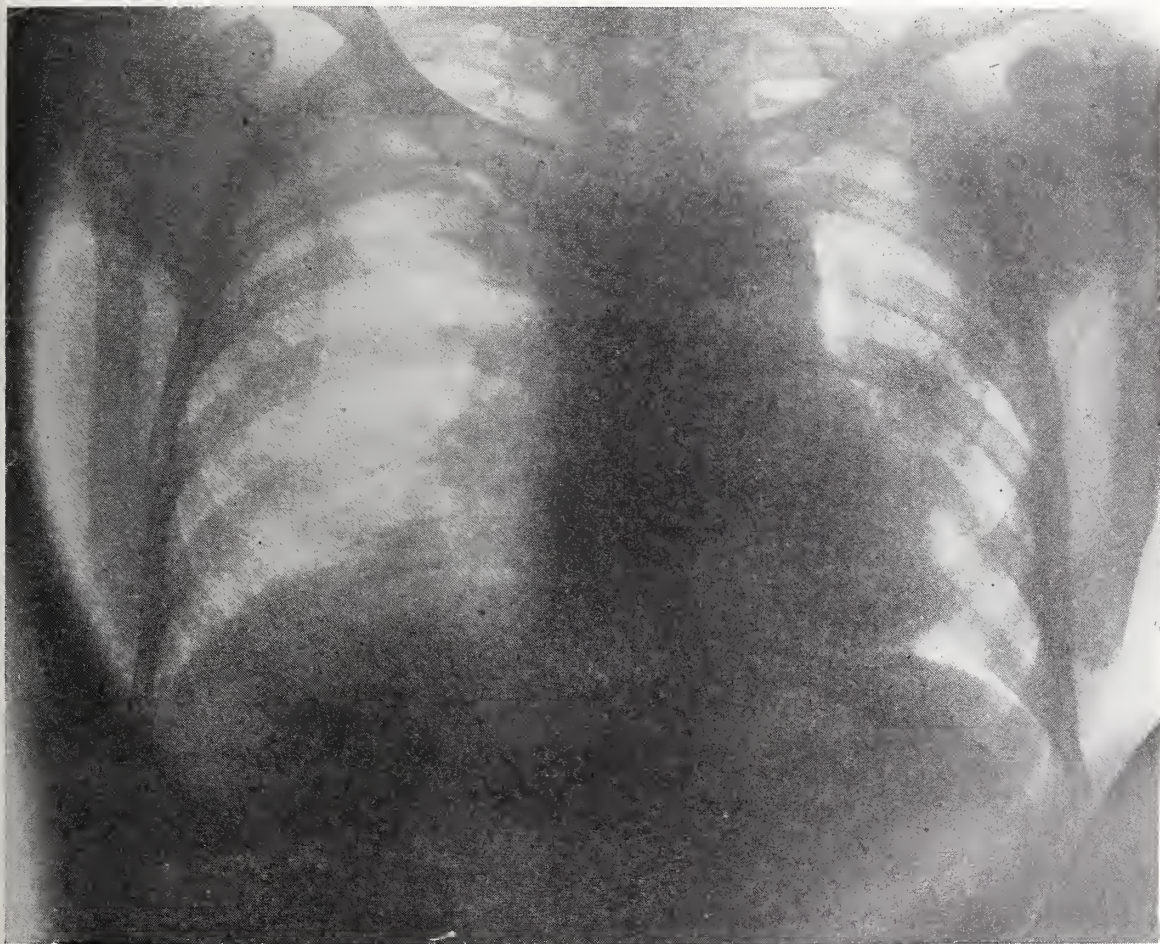
stance, until the integrity of the lung is destroyed, while it usually only involves the base or middle portion in contradistinction to tuberculosis at the apex. This case has involved the entire left lung. We also find marked enlargement of the left anterior cervical glands and the epitrochleals. I shall, upon this diagnosis, give this man mixed treatment—mercurial rubs every night and ascending doses of iodides. It has been suggested that the temperature suggested simulated Tb., but we know that visceral syphilis does produce temperature of this type frequently.

CLINIC No. 2.

Two Weeks Later.

Gentlemen, you will recall this case as one on which I diagnosed syphilis of the left lung two weeks ago and advised antisyphilitic treatment. He was given a rub of oz. 1 mercurial ointment every night and ascending doses of iodides, his financial condition not warranting salvarsan at

changes are to be noted. Instead of complete absence, with two exceptions—viz., slight tubular breathing in left axilla and slight fremitus at a point at the angle of left scapula—now we have vesicular tubular breathing over the entire lung, but still very much modified; and the X-ray plate made to-day shows beginning clearing up, and is a great improvement over the original



No. 3.—Syphilis of the lung (Witherspoon). Four weeks after treatment was begun. Same case as in Nos. 1 and 2.

the present war prices. It is, indeed, gratifying to note the marked changes for the better after only two weeks' treatment. Inspection now shows considerable expansion of the left side; and while the heart is still to the left, no friction sounds can be heard or felt. Both vocal and tactile fremitus have increased and can be gotten over the entire lung. Percussion, you will remember, gave complete flatness from base to apex then, but now you get a distinct vesicular resonant note. But upon auscultation, the most marked

plate, to which I again call your attention for comparison. It is, indeed, gratifying to find such rapid and marked response to our treatment. I may add that the temperature, which, as you will recall, was always present from 99 to 101½, immediately subsided on treatment, and in a few days went to normal and has remained so. This case is so interesting and the results so promising that we will give a dose of salvarsan, keep up the mixed treatment, and show him to you two weeks from this date.

*Two Weeks Later (Four Weeks from
Date of Diagnosis).*

Gentlemen, permit me before taking up the cases of to-day to show you the case of syphilis of the left lung and X-ray plate of to-day (four weeks after treatment was instituted). You will note that the expansion on that side is practically normal, and the breath signs and other physical signs show resolution and restoration of the lung and are rapidly approaching the normal. The last X-ray plate, as you see, has cleared up until the lung is functionally splendid.

This is a great lesson to you, demonstrating as it does that by careful and thorough work, both by clinical and laboratory methods, a proper diagnosis will be suggested, and, best of all, even seemingly hopeless destruction of the function of an organ of syphilitic origin will yield to thorough treatment. This man is now practically well, except, of course, his arteriosclerosis remains, and the adhesion between the pleura and pericardium is permanent, but will not prevent him from earning a living if he will observe the rules of living given him to protect his cardiovascular changes.

The X-ray plate, since the clearing up of the pulmonary lesion, demonstrates the correctness of our diagnosis of an aortic aneurysm of the ascending portion of the arch. This is gratifying, as you will recall that the left lung was so infiltrated that all shadows of the heart and aorta were obliterated and the diagnosis made only by the physical signs, this lesion having given no symptoms because of the dominant pulmonary signs. In view of the rapid response to specific treatment, confirming the diagnosis of syphilis, it can be confidently promised that under thorough treatment this man should avoid further trouble from the lung pathology and must now take care of his cardiovascular symptoms.

Your membership in the Tennessee State Medical Association will lapse on April 1 unless your dues are paid before then for the year 1917. This is the last number of the Journal you will receive until your dues are paid and your name is reported to the Secretary. Why not pay up and keep up paying up at the right time? It will make it easier for everybody concerned.

SOME FALLACIES IN THE ACCEPTED
TREATMENT FOR OPIUMISM.

BY H. E. GOETZ, M.D.,
Knoxville.

It will not be my purpose in this article to draw any comparisons between the treatment that I have been successfully using for opium addiction and any other treatment now recognized by the medical profession, but rather to point out the shortcomings or the fallacies in the accepted treatments for this disease. No doubt these shortcomings caused Da Costa to lament, like others of the profession: "There is no cure for drug addiction."

In the light of my experiences during the past three years, I regard the vast majority of these addicts as curable when handled intelligently, and under the system which I have dealt with at length on previous occasions. There is, perhaps, no disease known to medicine that has in the past been as unsuccessfully treated as has drug addiction. I was recently handed a letter by a superintendent of an institution for the insane which had been written by the physician in charge of a well-known institution where drug addiction is treated, and in this letter I read: "I have cured this man of the drug habit no less than five times in the past two years, but he persists in relapsing." And these continued relapses have caused the profession generally to regard drug addiction as incurable.

A few years ago, when I became interested in this class of work, I visited the various medical centers in search of information on this subject, and concluded that the field was one that promised much to the painstaking investigator. The success that we have met with in the treatment of patients who have come under our care has been largely due to the doing of the things that have been completely overlooked by others working along this line and in throwing down the fallacies and taking up only that which had proven itself to be good.

I first wish to speak of gradual reduction, which is doubtless the oldest system, or so-called "cure," and only to speak of it in condemnation. It is the most inhumane of any of the treatments, in that the patient is never comfortable from the first marked reduction of the doses until the end

of the punishment, like the story of the proverbial Dutchman who cut off the bulldog's tail an inch each day to save the dog pain, only to find that the last cut made the dog howl the loudest. So it is, in the language of Mark Antony, "the most unkindest cut of all;" and it is just after this last cut that Erlenmyer has well described the condition of the patient thus: "After the withdrawal he is left in such a condition of physical weakness and mental dilapidation as to be the victim of intolerable suffering and unfit for enjoyment or application to work. He cannot sleep, he has no appetite, he often vomits, and he feels so much used up that he will not rise up in bed. His condition continues for a long time and grows worse from week to week. Various attempts at relief prove useless. Morphine is the only remedy." My experience would cause me to modify this authority's opinion by saying that his condition grows worse hourly until the patient goes back to his former habit or dies from exhaustion or has applied the measures that common sense would dictate. The withdrawal of the drug alone by no means constitutes a cure. The victim is left helpless, with morphine yet in his secretions and toxins produced by morphine due to its inhibitory action on the liver, spleen, intestines, and kidneys, and further by benumbing the centers in the brain, which presides over the functions of the body, all of which renders him most miserable and presents a picture which words are powerless to paint. His heart's action is bad; he is in a state of unrest; sleepless; his vision reduced; his appetite gone; hallucinations are present; leg and back pains are almost intolerable; and any disease in the category may be suggested on him; and unless his one panacea for all ills—namely, opium—is quickly administered, death relieves him of his suffering.

I was interested a year or more ago in an experiment that was being conducted in a neighboring town by a well-meaning physician who placed in jail fourteen opium addicts in order that he might control them while he administered the gradual reduction system for their cure. I visited these patients with this physician at his suggestion and noted their condition. At the end of two weeks not one of the whole fourteen failed to lament at the suffering he had gone through with, and all avowed that they would go to their favorite drug as soon as released. Some months afterwards I learned through this physi-

cian that they all returned to their former habit. I do not mean to say that there have not been some "cures" with this system, for I remember once reading in the Bible that three fellows were put in a fiery furnace and came out unscorched.

Some years ago there appeared in the Journal of the American Medical Association an article by Dr. Alexander Lambert, of New York, offering to the medical profession a "system" for drug addiction which he stated Mr. Charles B. Towns, of New York, to be the author of. This treatment is pretty well known to the medical profession, and consists of the administration of atropine. However, the formula indicates tincture of hyoscyamus and belladonna, with anthoxylin, given in hourly doses. Compound cathartic pills are administered, with blue mass, and large quantities of the drug to which the patient is addicted. I tried out this treatment clinically, following most minutely the details as laid out in Dr. Lambert's article, together with the information that I had gathered from a visit to the Towns Hospital, in New York, and signally failed in every case that I undertook, dismissing the victims at the end of the period, with apologies for the ordeal through which I had put them, together with the return of fees which had been advanced. I observed that this mixture, belladonna and hyoscyamus, produced violent delirium in most patients, since atropine is not as rapidly eliminated from the system as one might gather from reading the authorities on the same. This delirium superinduces exhaustion, which is materially added to by the hourly disturbance of the patient for five days and nights in the administration of the drops, together with the drastic purges. At the end of the period the patient is exhausted and presents the usual picture seen in addicts where the drug has been withdrawn, and it is just at this point that Dr. Lambert advises us to administer two grains of codeine. Remarkable advice from so wise a head! The only portion of this treatment that I can recommend is the purging, with a modification; and if relief has come to some patients with this treatment, it is due, I believe, to this feature.

A more recent treatment that has appeared in the columns of the Journal of the American Medical Association is that of Dr. Sceleth, of Chicago. His published formula, which he says is the "essence" of the treatment, contains scopolamin, pilocarpin, dionin (ethyl-morphine hydro-

chloride), alcohol, water, and cascara. In discussing this treatment, Dr. Sceleth tells us that "scopolamin is one of the atropine series, and, in so far as atropine is the physiologic antidote to morphine, represents the specific element of the treatment." Just how far this drug is the antidote to morphine, we are not told. As with a great many other drugs, the action of the same is assumed by a great many physicians because "somebody said so," without ever taking into consideration clinical evidences that would prove beyond a doubt that the action is not what is laid down; and so it is that atropine is not the antidote to morphine. Both atropine and morphine produce dryness of the mouth, and both are capable, under certain circumstances, of stimulating the heart. Both are cerebral stimulants, and are capable of producing delirium. They are opposite in their action on the pupil, which matters little or nothing to the welfare of the patient. On respiration both are dangerous depressors, and from Hare we read: "Atropine is a stimulant to the respiratory centers in ordinary amounts (mark you, 'ordinary amounts,' not amounts necessary to impress a drug addict); but recent careful study shows that its high reputation as a respiratory stimulant is not based either on clinical or experimental evidence. In many cases it fails to impress respiration at all. *It is inferior in the treatment of opium poisoning to caffeine and strychnine.*" And I know good teachers who teach their students that it is positively murder to administer this drug in acute morphine poisoning. The administration of any of the atropine group, be it scopolamin, hyoscin, daturin, or atropine itself, in opium poisoning, either acute or chronic, is irrational, and treatments of opiumism depending upon this drug for their cure or relief should be classed with "liquor-zone." Pilocarpin, another of the ingredients of this formula, is also a respiratory depressor; and as all addicts are quite likely to have depression of this character during their treatment, its administration in any marked quantity will be contraindicated, and surely in quantities sufficient to produce diaphoresis would be a dangerous procedure. Edema of the lungs is a frequent complication where much of this drug is given, and in addicts where the vitality is always lowered this complication is an ever-apparent one.

Ethyl-morphine hydrochloride, as the name suggests, is a derivative of morphine, and, if

given in sufficient quantities, will stop pain, produce sleep, and, in fact, has the same action as morphine. I have substituted it many times for morphine in all forms of opium addiction, with the same satisfying effects. In speaking of this drug in the formula of Dr. Sceleth, we are told that "the patient receives four grains of dionin a day for the first six days, . . . which serves merely as a substitute for morphine"—and in the same sense as corn liquor would for rye liquor. Further, we read: "It may be remarked at this point, in reply to possible adverse criticism relative to the giving of one habit-forming drug as a substitute for another, that the administration of dionin for nine days (in diminishing doses during the last few days) is insufficient to cause a new habit, and that such contingency actually does not arise." This is about the only point in the treatment upon which the Doctor and I agree. No "new habit" would likely arise, since it would only be a continuation of the old one. Opium is opium, and opium habit possessed the patient in the beginning as it would in the end. A little further in this astonishing statement we read: "By the fifth day, as a rule, the patient's desire for morphine is gone." It is not likely that an addict full of dionin would want morphine, any more than a drunk full of whisky would want cognac. In speaking of the results obtained under this treatment: "The only abstinence symptoms of any importance being *insomnia, vomiting, and diarrhea.*" Enough of these three symptoms will place a patient where treatment for morphine addiction is unnecessary. We would consider a patient with either of these symptoms in a relatively serious condition, and, if he had all three, would think the outlook grave. On this point the Doctor says, further, that "the vomiting and insomnia, which occur more or less constantly, are not due to the scopolamin mixture, *but occur in any treatment.*" I wish to take exception to this statement most positively. These symptoms never occur in our patients under the treatment as we administer it, and we feel that if we could not conquer insomnia first the treatment would be of no avail, as any patient suffering with this affliction is doomed to take up some habit-forming drug to induce sleep.

Of the remaining ingredients in the formula—namely, cascara, alcohol, and water—I will remark that the habit-forming properties of alcohol are too well known to admit of any discus-

sion; and, in my estimation, the only commendable things in the formula are cascara and water, which, if given in quantities sufficient, are good eliminants.

Of the six drugs mentioned, three are well known to be habit-forming—namely, ethyl-morphine hydrochloride, alcohol, and scopolamin. Scopolamin and pilocarpin are dangerous depressors to the respiration; and, on the whole, the treatment appears so irrational that I have varied my rule and have not given it the clinical trial that I have the others.

In treating drug addiction, let it be remembered that scopolamin, hyoscin, and atropin are habit-forming drugs when given in combination with morphine; that we frequently meet addicts who are fixed in their habit to these combinations and refuse to be satisfied with opium alone; that hyoscin or scopolamin or daturin or any analogous drug, when given in quantities sufficient to impress a morphine addict, will also produce delirium and frequently dangerously depress respiration and heart action; that, chemically, hyoscin and scopolamin are the same drug; that morphine is not eliminated from the secretions of one addicted to its use for from three to six weeks after the drug has been discontinued; that no cure for drug addiction requiring a patient to remain in the institution less than four to six weeks will relieve your patient of addiction; that the use of opium in any form, substituting for another form of opium, in the treatment of these addicts, is a fallacy and results in nothing more than in switching your patient from one track to another, and that to carry a patient through the withdrawal period with heroin or dionin is not only unscientific and devoid of reason, but criminal; that belladonna or any of its kindred group will not cure opium addiction, nor is it antagonistic to opium addiction; that the treatment of these patients outside of institutions equipped for this work is, in the main, unsuccessful, and treatments that would relieve your patients where properly handled would fail when left to be administered by friends or family at home. Let it be remembered that all opium addicts should be regarded as physically and mentally diseased individuals, and that they are entitled to the sympathy of their friends and their physicians in the same degree as any other afflicted person; that the home treatments that we have examined de-

pend upon opium in some form for their satisfying effect upon your patient.

In closing, I make a plea for ethical institutions in this work. I regret that the medical profession has, in the past, been prone to take "printer's ink" as their guide in recommending their patients to institutions for treatment. Quacks have flourished throughout the country, have gulled the addict, and are successful only in continuing the unhappy addict in his habit. I trust that in the future more stringent regulations will be enforced by law on all institutions handling this class of work, and that their work will be supervised and inspected by proper authorities, and to this end I recommend specific legislation.

SUPREME COURT UPHOLDS VITAL-STATISTICS ACT.

The Tennessee Supreme Court, in a decision rendered by Associate Justice Grafton Green and concurred in by all other justices of the court, has upheld the constitutionality of Tennessee's vital-statistics Act. The opinion in full is here published for the benefit of the readers of the Journal.

It is, indeed, most gratifying to all who believe that birth and death registration are worth while and who want to see Tennessee keep step with forward states in the march of progress to know that our vital-statistics law, the very foundation stone in the arch of all public-health legislation, has successfully withstood the first attack made upon it in the courts. Since its constitutionality has been established, it is to be hoped that all who are in any way concerned with the operations of the law will now give most generous support, to the end that birth and death registration may be made as complete as possible and that our citizens may receive the fullest benefit from the workings of this progressive law.

STATE OF TENNESSEE

v.s.

E. C. NORVELL AND LIGE MERRELL.

Grundy County Criminal Court.

OPINION.

The defendants in error, undertakers, doing business in Tracy City, were indicted for handling and removing a dead body from the Fourth Civil District of Grundy County without a permit for the removal of the

said body. The indictment was based on Chapter 30 of the Acts of 1913, known as the "vital-statistics law."

A motion to quash was filed by the defendants in error, in which the constitutionality of the Act, as well as the sufficiency of the indictment, was challenged. The motion to quash was sustained, the trial judge being of opinion that the Act was unconstitutional. The state has appealed in error to this court.

In order to discuss the questions raised on this appeal, it becomes necessary to make rather a full quotation of this statute.

The title is: "An Act to provide an effective system for the keeping of records of all births and deaths in Tennessee, and to provide penalties for the violation of this Act."

The first four sections of the Act provide that the State Board of Health shall have charge of the registration of births and deaths and keep a record thereof; for the division of the state into registration districts, and for the appointment of officers to carry out the purposes of the Act, and like matters.

The sections of the statute particularly drawn in question in this case are as follows:

"Sec. 5. That the body of any person whose death occurs in the state shall not be interred, deposited in a vault or tomb, cremated, or otherwise disposed of, or removed from or into any registration district, or be temporarily held pending further disposition more than seventy-two hours after death, until a permit for burial, removal, or other disposition thereof shall have been properly issued by the Registrar of the district in which the death occurred; and no such burial or removal permit shall be issued by any Registrar until a complete and satisfactory certificate of death has been filed with him as hereinafter provided; and provided, further, that when a dead body is brought into a registration district of this state for burial or other disposition, then the transit and removal permit issued in accordance with the law and health regulations of the place where death occurred shall be accepted by the local Registrar of said district as a basis upon which he shall issue a local burial permit in the same way as if the death occurred in his district; he shall plainly enter upon the face of the permit the fact that it was a body shipped in for interment, and give the actual place of death; and provided, further, that a burial permit shall not be required from the local Registrar of the district in which interment is made when a body is removed for purposes of burial or other disposition from one district to another in this state.

"Sec. 6. That stillborn children, or those dead at birth, shall be registered as births and also as deaths, and a certificate of both birth and death shall be filed with the local Registrar in the usual form and manner, the certificate of birth to contain in place of the name of the child the word 'Stillbirth.' The medical certificate of the cause of death shall be signed by the attending physician, if any, and shall state the cause of death as 'Stillborn,' with the cause of the stillbirth, if known; whether premature birth, and, if born prematurely, the period of uterine gestation in months, if known; and burial or removal permits in the usual form

shall be required. Midwives shall not sign certificates of death for stillborn children, but such cases and stillbirths occurring without attendance of either physician or midwife shall be treated as deaths without medical attendance, as provided for in Section 8 of this Act; and provided, further, that a certificate of birth and death shall not be required for a child that has not advanced to the fifth month of uterogestation.

"Sec. 7. That the certificate of death shall be of the United States standard form, as approved by the Bureau of Census, and shall contain the following items:

"1. Place of death, including state, county, civil district, incorporated town or city; if in a city, the ward, street, and house number; if in a hospital or other institution, the name of the same to be given instead of the street and house number; if in an industrial camp, the name of the camp to be given.

"2. Full name of descendant; if an unnamed child, the surname, preceded by 'Unnamed.'

"3. Sex.

"4. Color or race—as, white, black (negro or negro descent), Indian, Chinese, Japanese, or other.

"5. Conjugal condition—as, single, married, widowed, or divorced.

"6. Date of birth, including year, month, and day.

"7. Age in years, months, and days; if less than one day, hours or minutes.

"8. Occupation, the occupation to be reported of any person who had any remunerative employment, women as well as men, stating (a) trade, profession, or particular kind of work; (b) general nature of industry, business, or establishment in which employed (or employer).

"9. Birthplace—state or foreign country.

"10. Name of father.

"11. Birthplace of father—state or foreign country.

"12. Maiden name of mother.

"13. Birthplace of mother—state or foreign country.

"14. Signature and address of informant.

"15. Official signature of the Registrar, with the date when certificate was filed and registered number.

"16. Date of death—year, month, and day.

"17. Statement of medical attendance of deceased; fact and time of death; time last seen alive, and the cause of death, with contributory cause (secondary) or complication, if any, and duration of each, and attributed to dangerous or unsanitary conditions of employment; signature and address of physician or official making the medical certificate.

"18. Length of residence (for hospital, institutions, transient or recent residents) at place of death and in the state.

"19. Place of burial or removal; date of burial.

"20. Signature and address of undertaker or person acting as such.

"The personal and statistical particulars (Item 1 to 13) shall be authenticated by the signature of the informant, who may be any competent person acquainted with the facts.

"The statement of facts relating to the disposition of the body shall be signed by the undertaker or person acting as such. The medical certificate shall be made and

signed by the physician, if any, last in attendance on the deceased, who shall specify the time in attendance, the time he last saw the deceased alive, and the hour of the day at which death occurred. And he shall further state the cause of death, so as to show the course of disease, or sequence of causes resulting in the death, giving first the name of the disease causing death (the primary cause), and the contributory (secondary) cause, if any, and the duration of each. Indefinite and unsatisfactory terms, indicating only symptoms of disease or conditions resulting from the disease, which will not be held sufficient for issuing a burial or removal permit, and any certificate containing only such terms as defined by the state Registrar, shall be returned to the physician for correction and more definite statement. Causes of death, which may be the result of disease, as violence, shall be carefully defined; and if from violence, the means of injury shall be stated, and whether (probably) accidental, suicidal, or homicidal. And in death in hospitals, institutions, or of nonresidents, the physician shall furnish the information required under this head (Item 18), and may state where, in his opinion, the disease was contracted.

"Sec. 8. That in case of any death occurring without medical attendance, it shall be the duty of the undertaker to notify the local Registrar of such death; and when so notified, the Registrar shall inform the local health officer and refer the case to him for immediate investigation and certification prior to issuing the permit; provided, that when the local health officer is not a qualified physician, or when there is no such official, and in such cases only, the Registrar is authorized to make the certificate and return from the statement of relatives or other persons having adequate knowledge of the facts; and provided, further, that if the death was caused by unlawful or suspicious means, the Registrar shall then refer the case to the coroner for his investigation and certification. And any coroner whose duty it is to hold an inquest over the body of any deceased person and to make the certificate of death required for a burial permit shall state in his certificate the name of the disease causing death, or, if from external causes, (1) the means of death, and (2) whether (probably) accidental, suicidal, or homicidal; and shall, in either case, furnish such information as may be required by the state Registrar in order to properly classify the death.

"Sec. 9. That the undertaker, or other person acting as undertaker, shall be responsible for obtaining and filing the certificate of death with the local Registrar of the district in which death occurred, and for securing a burial or removal permit prior to any disposition of the body. He shall obtain the personal and statistical particulars required from the person best qualified to supply them, over the signature and address of this informant. He shall then present the certificate to the attending physician, if any, or the health officer or coroner, as directed by the local Registrar, for the medical certificate of the cause of death, and other particulars necessary to complete the records, as specified in Sections 7 and 8; and he shall then state the facts required relative to the date and place of burial over his signa-

ture and with his address, and present the completed certificate to the local Registrar in order to obtain a permit for burial, removal, or other disposition of the body. The undertaker shall deliver the burial permit to the sexton, or person in charge of the place of burial, before interring or otherwise disposing of the body, and shall attach the transit permit containing the corpse when shipped by any transportation company, said permit to accompany the corpse to its destination, where, if within the state of Tennessee, it shall be delivered to the sexton, or to other person in charge of the place of burial."

Other sections of the statute provide means of registration of births and impose certain duties on the Registrars with reference to infectious diseases and impose penalties upon various persons for failure to comply with the provisions of the statute.

There can be no question but that this statute will tend to promote the safety, health, and well-being of the community.

The state of Tennessee maintains a Board of Health at considerable expense created for the purpose of fighting and endeavoring to control the diseases to which the inhabitants of the state are subject. Perhaps the most important duty of the State Board of Health is to take steps, in coöperation with local health officers, for the prevention of disease. This work cannot be intelligently nor effectively prosecuted without the information which the statute in question is designed to afford. The various local Registrars are required to file the certificates procured by the undertakers with the Board of Health. From this data the Board of Health can determine the needs of each particular community in the state and may employ the necessary measures accordingly. These reports will show where tuberculosis prevails, where typhoid predominates, where there is malaria, and, generally speaking, will indicate the hygienic wants of each section of the state. The Board of Health will thus be able to take the precautions and administer the relief most needed by every community. They will not be left to work in the dark.

Such a system is just as necessary to a successful campaign by the Board of Health as is information concerning the enemy's movements to the general in command of an army. There can be no specialized or well-directed effort by the Board of Health without such knowledge.

These reports likewise furnish the Board of Health with information of contagious diseases, and will enable the board to promptly inaugurate quarantines and undertake other repressive measures to confine the scope of such maladies and prevent epidemics.

Looking to another aspect of the material welfare of the state, no considerable immigration from one state to another occurs until those coming in have made inquiries as to the health and the death rate of the particular locality to which they intend to move. With the information forthcoming from the operation of the vital-statistics law, our Board of Health will be in a position at all times to reply to such inquiries from those desiring to move into Tennessee.

The provisions of the statute with reference to the

registration of births, which are not drawn in question on this appeal, will obviously be most useful. A permanent record of the births and parentage of all persons born in the state will be of great service in the administration of estates and in fixing the devolution of property. Such matters are often questions of doubt in important litigation. The statute makes certified copies of these records *prima facie* evidence.

The records of births likewise will prove of much value in the enforcement of the laws against child labor. They will make fraud and deception on the part of parents and employers impossible.

We might mention other beneficent offices of the statute, but sufficient has been said to demonstrate that the Act is a wholesome exercise of the police power of the state. It tends to promote the health, safety, and happiness of our citizens and will aid in the enforcement of other laws.

Such being our view of the Act, it is obvious that the constitutional objections urged against it are not well made.

It is contended that the statute is in violation of Section 8 of Article 1 of the Constitution of Tennessee, "No man shall be taken or imprisoned or disseized of his freehold, liberties, or privileges, or outlawed or exiled or in any manner destroyed or deprived of his life, liberty, or property, but by the judgment of his peers or the laws of the land;" and that it is in violation of Section 21 of Article 1 of the Constitution of Tennessee: "That no man's particular services shall be demanded or property taken or applied to public use without the consent of his representatives or without just compensation being made therefor."

It is well settled that statutes such as the one under consideration were passed in the exercise of the police power of the state, and are not within the prohibition of these sections of the Constitution. *Washington v. Mayor of Nashville*, 31 Tenn. (1 Swan), 180; *Wright v. State*, 50 Tenn. (3 Heisk.), 256; *House v. White*, 64 Tenn. (5 Bax.), 692; *Theilan v. Porter*, 82 Tenn. (14 Lea), 622; *Henley v. State*, 98 Tenn., 665; *Webster v. State*, 110 Tenn., 491; *Morrison v. State*, 534; *Mottlow v. State*, 125 Tenn., 547.

It is also urged that the vital statistics Act is in violation of the fifth amendment to the Constitution of the United States. In reply to this, it is sufficient to say that the powers of the Federal Government alone are restricted by the fifth amendment to the Federal Constitution. *Kelly v. Pittsburg*, 104 U. S., 78. The first ten amendments to the Constitution of the United States do not apply to the states, but are restrictions upon the power of the Federal Government only. This has been held since *Livingston v. Moore*, 7 Pet., 469, and *Barren for Use v. Baltimore*, 7 Pet., 243.

It may be observed that the Act in question is not in violation of the fourteenth amendment of the Constitution of the United States any more than it counter-venes the section of the Constitution of Tennessee heretofore quoted. See Federal cases reviewed in *Mottlow v. State*, *supra*.

Properly construed, this statute is not unreasonable nor arbitrary in its provisions, and it imposes no undue

burden on the undertakers. The prohibition against holding a dead body for more than seventy-two hours is humane as well as sanitary. In the great majority of cases it will be an easy matter for the undertaker to procure from the family or friends of the deceased the information required by Subsections 1-13 of Section 7 of the Act. The attending physician is required under penalty to add his statement as to the time and cause of death, etc., and the undertaker then completes the certificate with the place of burial or removal and the date thereof. If the death occurs without medical attendance, the undertaker is required to report to the Registrar, upon whom certain duties are imposed in such cases by Section 8 before the issuance of a burial permit. When the death certificate is properly made out and filed with the local Registrar, the latter is required to issue a permit for burial, which the undertaker turns over to the sexton in charge of the cemetery where the interment takes place. If no sexton is in charge of the burying ground, the undertaker indorses a statement of that fact on the permit, and is himself required to return said permit to the Registrar.

The statute was not intended to require an impossibility of any one. Cases will arise in which the undertaker cannot procure the information prescribed for inclusion in the death certificate, as when he is called on to bury strangers and others concerning whom the statutory details are not available. If, after diligent effort, the undertaker is unable to obtain such information, upon a proper showing to this effect the local Registrar will issue a burial permit notwithstanding. It is conceivable, of course, that the attending physician or local Registrar or others may prove obstreperous or unmindful of the obligations imposed by the statute, and thus interfere with an orderly burial. In such an event the undertaker may safely proceed with the disposition of the body. If he is diligent himself to comply with the law, the court will not punish him for the default of others.

These exceptional cases will, no doubt, be covered by the rules which the Board of Health is expressly authorized to promulgate by Section 1 of the statute.

The duties placed upon the undertaker by the statute will put him to some trouble. Organized society is entitled to demand such services of any citizen, however, for the health and safety of all, just as for the same reasons the property of any citizen may be destroyed without compensation. The undertaker is in a position to render this service to the state in most cases without special effort. His charges are ordinarily sufficient to cover this additional labor imposed by the statute, if he were entitled to compensation for it.

Statutes very similar to the one under consideration have been upheld in Iowa and Kentucky. *Robinson v. Hamilton*, 60 Ia., 134; *Commonwealth v. McConnell*, 116 Ky., 358. See note Anno. Cas., 1912-C, 686, where other cases sustaining kindred legislation are collected.

The Supreme Court of Ohio reached a different conclusion and held a similar statute invalid in *State v. Boone*, 84 Ohio, 346, Anno. Cas., 1912-C, 683. This case, while it seems to stand alone, may be differentiated from the one before us. It rests on a provision of what

is called the "ordinance of 1787," which was an Act of Congress providing for the government of the Northwest Territory and its future government after it should have been organized into states. The provisions of this ordinance are said to be the fundamental law of Ohio and paramount to the provisions of the state Constitution, and it seems that in Article 2 of said ordinance it is provided that neither the services nor property of any individual shall be taken without full compensation, even though "the public exigencies make it necessary." This language appears to be more rigid and comprehensive than the constitutional provisions of Tennessee.

We do not think that any of the provisions of the statute before us are without the scope of the caption, and, accordingly, we conclude that the statute does not violate Section 17 of Article 2 of the Constitution of Tennessee. We have discussed these things orally, and do not find it necessary to include such matters in this opinion. It is sufficient to say that we think all the provisions of the statute are germane to the title.

The objection to the indictment is not well taken.

The judgment of the trial court will, accordingly, be reversed and the case remanded for further proceedings.

GRAFTON GREEN, *Judge*.

NOTES AND COMMENTS

Let none but the most urgent of reasons keep you from the Nashville meeting.

Our footsteps in the sands of time may show that we have been walking backward.

There are several county secretaries who have made no 1917 reports. The time is short—*please send them in.*

If you are afraid to leave your "competitor" at home while you attend the Nashville meeting, why, just bring him along with you. It will help you both.

Did you know that there are yet left in Tennessee doctors (?) who advise that young children be exposed to measles and whooping cough so that they may "have it and get through with it?" We have lately heard of some.

Drs. Bryce Runyon and W. H. Brandau are two new members of the Montgomery County Medical Society. These have been good names on the roll of the Tennessee State Medical Association for a long time, and it will be a great pleasure to add the "Jrs."

Dr. Jere W. Caldwell has opened an office in the Doctors' Building, Nashville. Dr. Caldwell has recently completed a long term of service in the Manhattan Eye and Ear Hospital, New York, and his practice will be confined to this line of work.

There is one member of the Tennessee State Medical Association who has had approximately twenty-five letters from the Secretary in less than three years. We have yet to see the color of the ink he uses, if, indeed, he can write at all. There are just lots of others nearly as bad. We have never written to any one just for fun, either.

The Journal has received from the Frank S. Betz Company, of Hammond, Ind., one of the most handsome catalogue which has ever come to this office. This is the "Hospital Equipment" catalogue of this great concern, which, by the way, patronizes the advertising pages of the Journal and with whom we believe our readers can do business safely and profitably.

"The Mulford Digest" for January is a very beautiful little publication. The H. K. Mulford Company is twenty-five years old this year. The service which has been rendered by this concern for the saving of human life and the protection of the health of the people of this country has been a large service and one which has been given honestly and earnestly. We hope that the usefulness of this splendid concern will be continued for many more twenty-five-year periods.

DOCTOR:

This is your Journal. If you do not give it proper support by patronizing those whose ads. appear in its columns, it is your fault if the Journal does not carry the amount of advertising that it should be carrying. Kindly remember this fact.

THE SECRETARY

OFFICIAL PROGRAM.

EIGHTY-FOURTH ANNUAL MEETING
TENNESSEE STATE MEDICAL ASSOCIATION,
NASHVILLE, TENNESSEE,

APRIL 3, 4, 5, 1917.

OFFICERS TENNESSEE STATE MEDICAL ASSOCIATION.

President,
CHARLES NORRIS COWDEN, M.D.,
Nashville.

Vice President,
C. J. CARMICHAEL, M.D.,
Knoxville.

Vice President,
J. L. McGEHEE, M.D.,
Memphis.

Treasurer,
J. F. GALLAGHER, M.D.,
Nashville.

Vice President,
J. T. MOORE, M.D.,
Algood.

Secretary,
OLIN WEST, M.D.,
Nashville.

STATE REPRESENTATIVE TO NATIONAL LEGISLATIVE COUNCIL,

L. E. BURCH, M.D.,
Nashville.

COUNCILORS.

First District,
C. P. FOX, M.D., 1918,
Greeneville.

Sixth District,
J. F. GALLAGHER, M.D., 1917,
Nashville.

Second District,
S. R. MILLER, M.D., 1917,
Knoxville.

Seventh District,
M. A. BEASLEY, M.D., 1918,
Hampshire.

Third District,
J. A. HARDIN, M.D., 1918,
Sweetwater.

Eighth District,
A. B. DANCY, M.D., 1917,
Jackson.

Fourth District,
W. SCOTT FARMER, M.D., 1917,
Cookeville.

Ninth District,
R. W. GRIFFIN, M.D., 1918,
Tiptonville.

Fifth District,
F. B. REAGOR, M.D., 1918,
Shelbyville.

Tenth District,
J. L. ANDREWS, M.D., 1917,
Memphis.

DELEGATES TO AMERICAN MEDICAL ASSOCIATION.

JERE L. CROOK, M.D.,
Jackson,
1915-1916.

PERRY BROMBERG, M.D.,
Nashville.
1916-1917.

Alternate,

J. McC. HOGSHEAD, M.D.,
Chattanooga,
1915-1916.

Alternate,

S. R. MILLER, M.D.,
Knoxville,
1916-1917.

COMMITTEES.

Arrangements—J. F. Gallagher, M.D., Chairman; R. A. Barr, M.D.; Perry Bromberg, M.D.; Duncan Eve, Jr., M.D.; R. E. Fort, M.D.

Scientific Work—Olin West, M.D., Chairman; A. F. Richards, M.D., Sparta; E. R. Zemp, M.D., Knoxville; W. T. Black, M.D., Memphis.

Memoirs—I. A. McSwain, M.D., Paris, Chairman; K. S. Howlett, M.D., Johnson City; B. S. Wert, M.D., Chattanooga; O. Dulaney, M.D., Dyersburg; Robert Mann, M.D., Memphis.

Franklin; J. W. Brandon, M.D., Clarksville; W. J. Matthews, M.D.,

Conservation of Vision—P. M. Farrington, M.D., Memphis.

Public Health and Public Instruction—S. S. Crockett, M.D., Nashville, Chairman; Elizabeth Kane, M.D., Memphis; F. J. Runyon, M.D., Clarksville; W. N. Lackey, M.D., Gallatin; W. K. Vance, M.D., Bristol.

Public Policy and Legislation—H. M. Tigert, M.D., Nashville, Chairman; Jere L. Crook, M.D., Jackson; E. D. Newell, M.D., Chattanooga.

Medical Defense—S. R. Miller, M.D., Chairman, Knoxville; Jere L. Crook, M.D., Jackson; H. M. Tigert, M.D., Nashville.

BOARD OF TRUSTEES.

J. F. GALLAGHER, M.D., Chairman,
Nashville.

C. J. BROYLES, M.D.,
Johnson City.

H. T. BROOKS, M.D.,
Memphis.

HOUSE OF DELEGATES.

The House of Delegates will meet each day at 8 A.M. and at 2 P.M. for sessions of one hour each. Delegates will please attend promptly so that they may be present at the scientific section as much as possible. If the business of the Association requires, the House of Delegates may prolong

its sessions or remain in session after the final adjournment of the general meeting.

General sessions will be held in the main auditorium of the Y. M. C. A., Seventh Avenue, North, and Union Street.

The opening session will be called to order at 10 A.M., Tuesday, April 3, by Dr. J. F. Gallagher, Chairman of the Committee on Arrangements. The public is invited.

Members will please register at once upon reaching the place of meeting and receive badges.

Members of the House of Delegates will receive properly marked badges upon presentation of credentials to the Secretary.

Be on time.

PROGRAM.

OPENING EXERCISES.

Call to order by J. F. Gallagher, M.D., Chairman of the Committee on Arrangements.

Prayer, Rev. T. C. Ragsdale, pastor of McKendree Church, Nashville.

Address of Welcome on behalf of the Nashville Academy of Medicine and Davidson County Medical Society, by H. M. Tigert, M.D., Nashville.

Response to Address of Welcome on behalf of the Tennessee State Medical Association, by A. F. Richards, M.D., Sparta.

Announcements by Chairman of the Committee on Arrangements.

Association placed in charge of the President, C. N. Cowden, M.D., Nashville.

SCIENTIFIC PROGRAM.

(Incomplete.)

1. "The Responsibility of the Medical Profession with Respect to the Prevention and Cure of Cancer," by W. M. Johnson, M.D., Sparta.
To open discussion: J. M. Clack, M.D., Rockwood.
2. "The Indifference of the Profession Toward Public-Health Laboratories," by William Krauss, M.D., Memphis.
To open discussion: William Litterer, M.D., Nashville.
3. "The Insanities and Their Relation to the Practice of Medicine," by J. J. Waller, M.D., Oliver Springs.
To open discussion: S. T. Rucker, M.D., Memphis.
4. "Hernio-Appendectomy," by R. J. McFall, M.D., Erin.
To open discussion: L. L. Sheddan, M.D., Knoxville.
5. "Inguinal Hernia," by H. L. Fancher, M.D., Chattanooga.
To open discussion: E. J. Johnson, M.D., Memphis.
6. "Regional Eczema," by R. G. Henderson, M.D., Memphis.
To open discussion: Harry Friedman, M.D., Nashville.

7. "Observations and Conclusions with Respect to Some of the So-called 'Diseases of the Stomach,'" by W. K. Sheddan, M.D., Columbia.
To open discussion: J. A. Crisler, M.D., Memphis.
8. "Laboratory Tests for Acidosis," by E. S. Maxwell, M.D., Nashville.
To open discussion: William Krauss, M.D., Memphis.
9. "Intra-abdominal Use of Oxygen," by J. H. Barnett, M.D., Chattanooga.
To open discussion: E. M. Sanders, M.D., Nashville.
10. "Health Insurance," by H. H. Shoulders, M.D., Nashville.
To open discussion: Joseph H. White, M.D., United States Public Health Service.
11. "Operative Treatment for Gangrene of the Feet, with Report of a Case," by J. B. Haskins, M.D., Chattanooga.
To open discussion: J. H. Baird, M.D., Dyersburg.
12. "Why Benign Mammary Tumors Should be Viewed with Suspicion," by John M. Maury, M.D., Memphis.
To open discussion: C. P. Fox, M.D., Greeneville.
13. "Remarks on Leukemia," by William St. John, M.D., Bristol.
To open discussion: W. A. Oughterson, M.D., Nashville.
14. "Fecal Fistula," by George R. West, M.D., Chattanooga.
To open discussion: D. R. Pickens, M.D., Nashville.
15. "Fibrinous Cavernositis," by Perry Bromberg, M.D., Nashville.
To open discussion: G. R. Livermore, M.D., Memphis.
16. "The Limitation of Hormone Therapy," by E. R. Zemp, M.D., Knoxville.
To open discussion: W. H. Witt, M.D., Nashville.

TUESDAY, APRIL 3, 8 P.M.

17. Presidential Address, "The Trend of the Times in Medicine and Surgery," by Charles Norris Cowden, M.D., Nashville.
 18. "Moving Pictures of Genito-Urinary Affections and Syphilis," by Edgar G. Ballenger, M.D., Atlanta, Ga.
 19. "Muscular Reëducation Following Infantile Paralysis—Illustrations," by Mr. Earl Harrison, Knoxville.
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20. "Nonspecific Factors in Certain Infectious Diseases," by J. O. Manier, M.D., Nashville.
To open discussion: James W. Jobling, M.D., Nashville.

21. "Left-sided Appendicitis," by Jere L. Crook, M.D., Jackson.
To open discussion: Raymond Wallace, M.D., Chattanooga.
22. "Further Considerations of Hydrothorax in Its Relation to Cardio-Renal Lesions," by Frank A. Jones, M.D., Memphis.
To open discussion: C. J. Carmichael, M.D., Knoxville.
23. "Traumatic Hysteria," by W. G. Somerville, M.D., Memphis.
To open discussion: A. W. Harris, M.D., Nashville.
24. "Gastric Ulcer and Its Differentiation," by John A. Witherspoon, M.D., Nashville.
To open discussion: W. S. Austin, M.D., Knoxville.
25. "First Corinthians, Fifteenth Chapter, Thirty-ninth Verse," by J. B. McElroy, M.D., Memphis.
To open discussion: O. J. Porter, M.D., Columbia.
26. "Syphilis and Internal Medicine," by J. S. McLester, M.D., Birmingham, Ala.
27. "Blood-Vessel Anastomoses, with Reports of Cases—Moving Pictures," by E. T. Newell, M.D., Chattanooga.
To open discussion: L. E. Burch, M.D., Nashville.
28. "Fractures of the Neck of the Femur," by Willis C. Campbell, M.D., Memphis.
To open discussion: W. S. Nash, M.D., Knoxville.
29. "The Management of Breast Feeding," by Oliver W. Hill, M.D., Knoxville.
30. "Simplified Artificial Feeding," by John M. Lee, M.D., Nashville.
31. "Patent Foods," by Owen H. Wilson, M.D., Nashville.
To open discussion: J. M. Selden, M.D., Chattanooga; W. N. Lackey, M.D., Gallatin; E. R. Zemp, M.D., Knoxville.
32. "The Treatment of Prolapse of the Remaining Structures After Removal of the Uterus," by W. T. Black, M.D., Memphis.
To open discussion: H. M. Tigert, M.D., Nashville.
33. "Surgery of the Prostate," by T. G. Pollard, M.D., Nashville.
To open discussion: J. B. S. Woolford, M.D., Chattanooga.
34. "Chronic Indurative Pancreatitis—Pancreatectomy—Presentation of Specimen," by William Britt Burns, Memphis.
35. "Acute Pancreatitis—Acute Hemorrhagic Pancreatitis, with Report of Case, Autopsy Findings, Demonstration of Specimen," by Herbert Thomas Brooks, M.D., Memphis.
To open discussion: M. C. McGannon, M.D., Nashville; A. A. Eggstein, M.D., Nashville.
36. "Splnectomy for Banti's Disease," by W. D. Haggard, M.D., Nashville.
To open discussion: T. D. Holloway, M.D., Knoxville.

37. "Practical Electro-Therapeutics," by J. M. King, M.D., Nashville.
To open discussion: E. M. Holmes, M.D., Murfreesboro.
38. "A New Species of Streptothrix in a Case of Rat-bite Fever," by William Litterer, M.D., Nashville.
To open discussion: Marcus Haase, Memphis.
39. "Physiology and Its Relation to Surgery," by E. Dunbar Newell, M.D., Chattanooga.
To open discussion: L. W. Haskell, M.D., Memphis.
40. "Operative Treatment for the Cure of Hernia," by W. A. Bryan, M.D., Nashville.
To open discussion: J. L. McGehee, Memphis.
41. "Our Views on Christian Science," by G. E. Horton, M.D., Wartrace.
To open discussion: Gus Shipley, M.D., Athens.
42. "The Treatment of Fractures," by E. A. Sayers, M.D., Nashville.
To open discussion: S. R. Miller, M.D., Knoxville.
43. "Acute Meningitis in Infancy and Childhood," by R. H. Perry, M.D., Nashville.
To open discussion: K. S. Howlett, M.D., Franklin.
44. "State Regulation of the Practice of Medicine as an Educational Problem," by Frederick R. Green, M.D., Chicago.
45. "The Diagnosis and Treatment of Pneumonia," by J. S. Campbell, Gordonsville.
To open discussion: G. E. Campbell, Elizabethton.
46. "Consideration of Backward Displacements of the Uterus," by J. F. Gallagher, M.D., Memphis.
To open discussion: J. P. Tillery, M.D., Knoxville.
47. "A New Theory as to the Cause and Cure of Pellagra," by C. J. Carmichael, M.D., Knoxville.
To open discussion: J. P. Jelks, M.D., Memphis.
48. -----, by D. L. Flanary, M.D., Dyersburg.
To open discussion: -----
49. -----, by W. S. Lawrence, M.D., Memphis.
To open discussion: Howard King, M.D., Nashville.

PROGRAM OF THE SECTION ON OPHTHALMOLOGY AND
OTOLARYNGOLOGY, APRIL 3, 4.

TUESDAY, 8 P.M.

President's Address, Charles Huff Davis, M.D., Knoxville.

1. "Glaucoma," by E. C. Ellett, M.D., Memphis.

To open discussion: G. C. Savage, M.D., Nashville.

WEDNESDAY, 9 A.M.

2. "Trachoma, with Special Reference to the Treatment with the Bulgarian Bacillus," by J. P. Crawford, M.D., Nashville.
3. "Inflammations of the Conjunctiva Resembling Trachoma," by C. J. Broyles, M.D., Johnson City.

To open discussion: G. S. Hayes, M.D., Greeneville, and O. Dulaney, M.D., Dyersburg.

4. "Laryngoscopy and Bronchoscopy," by R. C. Lynch, M.D., New Orleans, La.

To open discussion: Louis Levy, M.D., Memphis.

5. "Angioma of the Larynx, with Report of a Case," by Richmond McKinney, M.D., Memphis.

To open discussion: George E. Vaughn, M.D., Clarksville.

6. "Gonorrheal Ophthalmia," by J. T. Herron, M.D., Jackson.

To open discussion: A. F. Richards, M.D., Sparta.

WEDNESDAY, 2 P.M.

7. "Etiology of the Catarrhal and Suppurative Inflammations of the Nasal Accessory Sinuses," by J. McChesney Hogshead, M.D., Chattanooga.
8. "Symptoms and Diagnosis of the Catarrhal and Suppurative Inflammations of the Nasal Accessory Sinuses," by Hilliard Wood, M.D., Nashville.
9. "Treatment and Prognosis of the Catarrhal and Suppurative Inflammations of the Nasal Accessory Sinuses," by Herschell Ezell, M.D., Nashville.

To open discussion: W. G. Kennon, M.D., Nashville; G. B. Gillespie, M.D., Covington; and J. H. Kincaid, M.D., Knoxville.

10. "A New Theory on Hay Fever," by Thomas P. Miller, M.D., Knoxville.

To open discussion: L. M. Scott, M.D., Jellico.

11. "A Discussion of the Simple and Radical Mastoid Operations," by H. E. Christenberry, M.D., Knoxville.

To open discussion: W. W. Hill, M.D., Harriman.

12. "Ophthalmic Conditions Secondary to Infection in Other Parts of the Body," by O. Dulaney, M.D., Dyersburg.

To open discussion: M. M. Cullom, M.D., Nashville.

One-half an hour preceding the morning and afternoon sessions on Wednesday will be given to the exhibition of new instruments.

If you have a rare and interesting case, come prepared to report it, and you will be given the opportunity to do so.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn****MARCH, 1917****EDITORIALS****THE NASHVILLE MEETING.**

The time—April 3, 4, and 5—Tuesday, Wednesday, and Thursday.

The place—Nashville, Tenn.

The attendance—from five to seven hundred of the *best* doctors in the state.

The place of meetings—the Y. M. C. A. Building, corner Seventh Avenue, North, and Union Street.

The time of opening—10 o'clock, Tuesday morning, April 3.

The program—a good one, contributed to by some fifty members of the Tennessee State Medical Association and three distinguished guests from Southern states.

The Committee of Arrangements—Drs. J. F. Gallagher (chairman), Perry Bromberg, R. A. Barr, R. E. Fort, Duncan Eve, Jr.

The Committee on Entertainment—the Nashville Academy of Medicine and Davidson County Medical Society. If you don't see what you want, ask for it—so long as it's something dry. Blame the "bone-dry" law for this restriction.

The House of Delegates—will meet twice daily, in the Y. M. C. A. Building, on the same floor as that on which the hall where the general sessions are held is located.

The Eye, Ear, Nose, and Throat Section—will meet in the same building as that in which other meetings are held.

The papers—will be limited to twenty minutes (except those of invited guests).

The discussion—will be open to any member in good standing, and a special invitation is hereby extended to each member to "start something."

The Secretary—will be at your service for whatever he can do for you. So will every other member of the Nashville Academy.

OUR INVITED GUESTS.

The Tennessee State Medical Association has had the pleasure of hearing addresses at its annual meetings from most distinguished men from New York, Chicago, Baltimore, Boston, Cleveland, and other Northern and Eastern centers, and always these addresses have added very greatly to the value of the scientific programs. This year the Program Committee has invited two very able Southern gentlemen—Dr. E. G. Ballenger, of Atlanta, and Dr. J. S. McLester, of Birmingham—to appear before the association at the Nashville meeting, and we take very great pleasure in announcing to our members that these invitations have been accepted.

Dr. Ballenger is one of the South's ablest genito-urinary surgeons. His paper before the Section on Surgery of the Southern Medical Association was one of the features of the Atlanta meeting, illustrated as it was with most excellent moving pictures, which were remarkable in that they showed the interior of the urinary bladder. Dr. Ballenger's address at Nashville will also be illustrated with moving pictures which he has made. Dr. Ballenger will appear before the association on the evening of the first day of the meeting.

Dr. J. S. McLester is one of the most widely known internists in the South. His address at Nashville will be the feature of the program of the second day, and will be on "Syphilis and Internal Medicine." There can be none in all our membership who is not interested in this great subject, which overshadows all others in importance at the present time. We feel sure that the members of the association generally will be delighted with Dr. McLester's choice of subjects, and equally sure that all who hear him will be greatly pleased with the address and with the man.

A very hearty welcome awaits Drs. Ballenger and McLester from the Tennessee State Medical Association.

SEND IN THE TITLE OF YOUR PAPER.

If you desire to present a paper at the coming annual meeting of the State Association, please forward the title thereof to the Secretary at once. The preliminary program appears in this Journal, made up of titles which have already been forwarded. The Program Committee is ex-

tremely anxious to have the very best program possible—one that will be representative of the high character of the scientific medical men of Tennessee. To this end an invitation is hereby extended to all members of the association who may feel that they have something worth presenting to contribute to this program. It is earnestly desired that every man whose name is on the program shall have an opportunity for a good hearing. For this reason all contributors are asked to keep their papers within the time limit of twenty minutes, to be on hand when their papers are called, and not to ask to be heard if not present when called according to the printed program. *There will be no going back for the sake of men who are out of pocket when their papers are called.* It is hoped that discussions will start promptly, that what is said will be to the point, and that they will be participated in by a reasonably large number of the members.

ILLUSTRATIONS WITH PAPERS ON PROGRAM.

For those who desire to use plates, charts, or other illustrations in connection with the papers read at the Nashville meeting, a lantern will be available. This lantern will throw illustrations upon a screen, and either slides or pictures may be used. X-ray plates will be properly shown. All contributors to the program are urged to bring and to utilize any illustrations which they feel will add to the value of papers. A moving-picture machine will also be available for use. We ask only that the Secretary be notified that the lantern will be needed in connection with the reading of such papers.

THE COMMITTEE ON ARRANGEMENTS.

Dr. J. F. Gallagher, chairman, and Drs. R. A. Barr, R. E. Fort, Perry Bromberg, and Duncan Eve, Jr., compose the Committee on Arrangements of the Nashville Academy of Medicine and Davidson County Medical Society, which will have charge of all local affairs pertaining to the coming annual meeting of the Tennessee State Medical Association.

HOW FAR IN FAIRNESS?

To hold a degree in the American College of Surgeons, it seems to be necessary for the fellows to subscribe a generous sum to the endowment of the college, which endowment, we understand, has reached a considerable number of thousands. It has been generally known that the College of Surgeons has for some time had under consideration the matter of grading hospitals in the United States. It now appears that from the abundance of money which the college has in hand, the sum of \$20,000, to be supplemented by an equal amount from one of our well-financed "foundations," is to be expended in this work, and that the preliminary inspection of the hospitals of the country will soon be begun.

It has also been generally known that the Council on Medical Education of the American Medical Association has had in mind a somewhat similar scheme, to the end that a fifth medical year, to be spent in hospital service, be added to the present curriculum before the degree of Doctor of Medicine can be conferred upon students by medical schools to be classified as "A" Grade schools. This added year will, no doubt, be required in the near future, notwithstanding that two years of college work in chemistry, physics, biology, and one modern language will be demanded as a minimum entrance requirement to medical schools in "Class A" in 1918. In other words, in the next few years, seven years of medical work will be required of young men who desire to enter the practice of medicine. For the placing of these two years in chemistry, biology, physics, and language in a recognized college of arts and sciences is begging the question, because these subjects now constitute a special course, the so-called "premedical years." Under the present plan by the various State Boards of Medical Examiners of recognizing only graduates of "Class A" medical schools, and the council being both judge and jury as to what shall constitute a "Class A" school, the various medical schools and their constituents must conform to the prescribed regulations or forego the teaching or studying of medicine.

It will be seen that the council's power in this direction at present is unlimited, and it is hoped that this power will be exercised only for what is for the best. That such a condition could come about without a single statute, either of

government or state, bearing directly on the matter, bears eloquent testimony of skillful management and what implied promises—or, rather, hope—of financial aid will do. It is really becoming pitiful to see medical schools attempting to conform to the requirements of the council and running up a deficit each year with the forlorn (?) hope that the richly endowed foundations of education in the East will, in time, come to their rescue.

There can be but one real explanation for this condition, and that is that medical education was so poor in this country ten or fifteen years ago that something very radical had to be done. But there are men—educators, in fact—who, perhaps, are better acquainted with conditions in the South than are the gentlemen who made these regulations, and who believe that the advanced requirements are out of all proportion to the economic and educational conditions in the South. Such being the case, the schools in more favored sections of the country—e. g., the East—are placed at an overwhelming advantage. The point is this: That betterment in medical education is to be most earnestly desired, but not to the great detriment of one section and to the great advantage of another.

With this more or less recent history of the classification of medical schools in mind, it is interesting to speculate as to just what plan the American College of Surgeons will pursue in the classification of hospitals. Manifestly, if the desideratum is the training of physicians, a large general hospital is best; ergo, the small hospital must go. It is not believed by many that this will be easily accomplished, for it must be remembered that neither pupils nor nurses nor internes are absolutely necessary for the successful operation of a small hospital. Nor do the patients discharged from a hospital have to have a state board pass on their bill of health.

Within recent years small hospitals have been established in numerous towns. Around Nashville, Lebanon, Clarksville, Columbia, Paris, Dyersburg, Morristown, Tenn., and Hopkinsville and Franklin, Ky., may be mentioned. These hospitals are believed to be veritable boons to both the physicians and the people in their respective communities, and it is inconceivable that they shall be deprived of these advantages by arbitrary gradings by self-appointed authority in the name of the advancement of education. It

may be said that the care of patients is not as efficient in the small hospitals as in the larger hospitals in the cities, but the answer to that is that the care in the larger hospitals in some sections of the country is not as efficient as in other sections where there are still larger hospitals; but, even at that, a hospital is better than no hospital.

The grading of the larger hospitals will also be fraught with difficulties. It is to be remembered that by far the greater number of these hospitals are owned by the state, the city, or by private organizations, the last being, for the most part, religious bodies. It is not conceivable that coercion, by the withholding of internes or refusal to license nurses or dependent upon whether or not members of the staff are fellows in some self-governed surgical organization, will be effective in shaping the policy of such institutions. Let us have better trained physicians and let us have better equipped hospitals, to the end that every suffering soul shall be given the very best chance to be brought back to health and know again the joy of living; but let our attempts at attaining to the perfect be tempered by just recognition of the inherent rights of our fellow-men.

A NEW SOCIETY.

The Nashville Society of Ophthalmology and Oto-Laryngology was recently organized, with a membership embracing every member of the Nashville profession who devotes himself to special practice on the eye, ear, and throat. Dr. Leslie Bryan, the Secretary, is the only permanent officer of the society. Monthly meetings are held at the offices of members. The member at whose office the society meets is the chairman for that meeting. No papers are read, but only clinical reports are presented—preferably with the patients themselves. The organization of this new body is but another evidence of the scientific progressiveness of our Tennessee physicians who are giving their time to work in chosen specialties.

THE JOURNAL OF UROLOGY.

A "newcomer" into the field of medical and surgical journalism is *The Journal of Urology*, edited by Hugh Hampton Young, with the assistance of an "Executive Editorial Committee"

composed of twenty-one of the most able surgeons in America. The first number of this new periodical has gone into circulation, and none but the very best impressions can be received from its examination.

The announcement by the publishers states: "The Journal of Urology—Experimental, Medical, and Surgical—has been founded with the intention that it shall become the archives in the United States for papers dealing with the urinary tract and correlated subjects." We predict that the purposes for which the Journal of Urology was founded will be brilliantly accomplished.

AN HONORED MEMBER.

A few months ago a list of the members of the Tennessee State Medical Association was published in the Journal. The name of one of our oldest and well-loved members—one who has served as President, Secretary, and in other official positions—was omitted. We wish now to apologize to the association for the omission and to announce to the whole medical world that that old "war horse" of Tennessee medicine, Dr. Deering J. Roberts, is and has been all the time a member in good standing in the Tennessee State Medical Association, whose history he has helped to make and whose interests have been sacred to him. May time deal kindly with him, and may he be yet long spared to continue his membership in the association and to continue his wise counsel in its affairs.

EYE, EAR, NOSE, AND THROAT SECTION.

The second annual meeting of the Section on Ophthalmology and Otolaryngology of the Tennessee State Medical Association will be held in Nashville, beginning at 8 P.M., Tuesday, April 3. The sessions will continue through the morning and afternoon of the next day. The preliminary program will be found in another column of this issue.

The first meeting of this section was held last April; and while the attendance was much smaller than it should have been, the meeting was a very profitable and enjoyable affair. It is to be hoped that the coming meeting will be a

larger and better one in every way, and there is no reason why it should not be. The meeting will be a failure unless the men interested in this line of work attend and take part in the program. Make up your mind now to attend; and if you are not in the program, discuss the papers that are presented by other men.

As a preliminary, the Nashville Society of Ophthalmology and Otolaryngology will entertain the visiting members at dinner Tuesday evening at 6 o'clock. Be sure to come. *Boost the meeting.* E. L. ROBERTS, *Secretary.*

SOCIETY PROCEEDINGS

MEMPHIS SOCIETY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY.

JANUARY 9, 1917.

Dr. H. F. Minor in the chair.

OPTIC NEURITIS, RELIEVED BY A DECOMPRESSION OPERATION.

Dr. Ellett presented H. K., aged eighteen, seen September 11, 1911, complaining of constant frontal headaches for one month and blurred vision. O. D. 20-30, O. S. 20-30. In both eyes a few small linear hemorrhages were seen near the disk, and the retina was slightly edematous. In the right eye a large hemorrhage on the disk covered about one-fifth of it. Urine normal. With + .50 cy. ax 90°, he saw 20-20 + with each eye.

September 20: Swelling of retina and disk. R. 1. D., L. 2. D. Homonymous diplopia and slight ptosis. Pupils and ocular movements normal. Complains of headache, vomiting, and dizziness when standing.

October 5: Nerve swollen 2. D. R. and 3. D. L. The right disk shows more distension of the lymph sheaths and a few hemorrhages. Has diplopia, slight convergence of O. D., and the right pupil is dilated. Ocular movements, fields, and tension normal. In consultation with his physician, Dr. Meyer, and Dr. Somerville, a diagnosis of cerebellar tumor was made and the patient referred to Dr. Cushing, then of Baltimore. He agreed as to the diagnosis, and made a suboccipital decompression on October 13.

November 5: Optic neuritis, with two or three D. of swelling; more marked in O. S.; no head-

ache; no diplopia; no ptosis. Pupils equal and normal.

November 24: Vision 20-20 M. each eye.

January 3, 1912: No swelling of disk.

October 8: Physiological cups visible. Pupil 6 m.m., equal and normal.

December 17: Fields as shown on chart.

October 28, 1915: Sees 20-20 and J. 1. The right nerve is blurred at the nasal-edge.

Present condition: Eyes normal except the lymph sheaths on the disk are overfull, especially O. D.

Dr. Hooker wanted to know about tuberosity on right side of skull. It seems most marked on that side. Was it as marked before the operation?

Dr. Blue, in speaking of the case, said this was, indeed, a good result after operation, especially as there was no atrophy of nerve heads. This shows the need of doing the operation early.

Dr. Simpson wanted to know if Wassermann and tuberculin tests were made. Question as to what tumor was. Some cases might have almost as remarkable results from 606. Unusual final result, no matter what the cause of the condition was.

Dr. Ellett, in closing the discussion, said that he did not remember about the tuberosity. Does not know about the tuberculin or Wassermann tests, as he only saw the case in consultation for eye condition. Thinks same was done, but not sure, as he has no report of same.

RETINO-CHOROIDITIS.

Dr. Lewis presented Mrs. C., white, aged fifty-one. Complains of progressive loss of vision in both eyes. Began in left eye eight years ago. Right eye was fairly good until about one year ago. Family history negative. Has eight healthy children living. Lost her first and third children in infancy. Her health is good, and always has been so. Denies syphilis. Says she sees all kinds of light flashes and fireworks in her eyes, and has ever since the trouble started. This is worse at night when her eyes are closed.

Ophthalmoscopy shows the disk of left eye dimly outlined and of a dirty, grayish-red color. The retinal vessels show marked contraction. The retina is thin and pale, denoting atrophy. At many points the choroidal vessels are plainly seen, and at several these show sclerosis. Pigment deposits are scattered throughout the ret-

ina, but are more abundant around the macula region. In many places the pigment is seen covering the retinal vessels. Peripherally, the pigment is arranged similar to its arrangement in retinitis pigmentosa. The right eye presents nearly the same ophthalmoscopic picture, but the disease has not progressed quite so far, and the sclerosis of the choroidal vessels is absent.

Dr. Ellett said he would like to call attention to the very excellent example of sclerosis of the choroidal vessels, seen in the left eye between the macula and disk, since such a picture is not common. The eye grounds would seem to be those of chorio-retinal degeneration, the choroid participating as shown by the sclerosed choroidal vessels and by many rounded areas of disseminated choroiditis, especially in the right eye. He asked if Wassermann and tuberculin tests had been made.

Dr. Fagin said it was very interesting to see how the choroidal pigment had migrated and formed on top of retinal vessels.

Dr. Lewis, in closing, said that he had just seen the patient to-day, and had not had a chance to make Wassermann and tuberculin tests. Could report later as to findings.

OPTIC ATROPHY.

Dr. Stanford presented Alcorn Watson, colored, aged thirty-seven. Came to the office on January 8, 1917, complaining of failing vision for four or five months. He also complains of some pain in the right eye.

Examination shows the eyes clear, the pupils normal, and the anterior chambers normal.

The vision was O. D. 3-200, O. S. 15-200.

Ophthalmoscopic examination revealed clear media, disks a little pale and showing deep physiological cups (about 8 D.). The rest of the fundus was apparently normal.

The fields were markedly contracted, especially the right. In the right eye the patient had no color vision. Tension normal.

He gave a history of having had syphilis seven years ago.

The diagnosis was simple optic atrophy. The cupping is interesting on account of the unusual depth.

Dr. Ellett thought the field and the ophthalmoscopic pictures were in perfect harmony, since the case seemed to him to be one of primary optic atrophy, with an abnormally large physio-

logical cup. The cup did not extend to the periphery of the disk, and the nerve fibers around it were distinctly atrophic. The field was the typical contracted field of optic atrophy, just as we see in glaucoma, for instance—a contraction due to optic atrophy, though here the contraction is not usually concentric. The central scotoma in lesions of the nerve was usually, in his experience, due to atrophy of the central temporal quadrant of the nerve, the so-called "papillomacular bundle," as seen in toxic amblyopia.

Dr. Fagin said this cupping would seem to be physiological, and not pathological, because vessels do not drop over. Cupping seems to be to the side of the vessels.

Dr. Hooper thought this a remarkably clear case for the ophthalmoscope. He thought the same should show a central scotoma instead of narrowing of field.

Dr. Stanford, in closing, said tension had only been taken with fingers and was apparently normal. The case, to his mind, is one of optic atrophy, with deep physiological cup.

GLAUCOMA, RELIEVED BY THE LA GRANGE OPERATION.

Dr. Ellett reported the following case:

Mr. A. V., aged forty-three, was seen first in 1908, with a history of recent poor vision in the right eye. He had had syphilis twenty years before. Vision O. D. 20-200, O. S. 20-20. The right nerve was atrophic and cupped; vessels normal. Left nerve very white, with large cup. It was not clear that this was pathological. The pupils, tension, and anterior chamber were normal. Right pupil reacts directly and consensually, but left does not react consensually. Knee jerks normal. The tonsils were enlarged and the septum deflected. The hearing is failing. He was treated for several months with iodides and sweats, and the vision of the right eye improved to 20-60 partly. There was no change in the pupils, and the fields were as shown on chart No. 1. The tension in the right eye was then + 1. Pilocarpin locally was added to the treatment. A month later, vision 20-50. Operation on the right eye was advised. I did not see the patient again for two years.

January 5, 1911: Had been under treatment in St. Louis. The tonsils were removed and the septum operated, with excellent results. He had had no local eye treatment, but much

strychnine and iodides. Vision O. D. pl., O. S. 20-30. Both nerves were pale and cupped; tension —, more so in right eye. Pupils active. Eserine contracted the pupils and reduced tension, and vision became 20-20 in O. S. In February he had a slight inflammatory attack in O. D.

April 10: O. S. 20-20. Fields as in chart No. 2. At my advice, he went to Chicago for consultation, and both Dr. Wilder and Dr. Casey Wood made a diagnosis of glaucoma. He also saw Dr. Schneider, of Milwaukee, who gave the same diagnosis. The Wassermann, made now for the first time, was negative.

May 4, 1911: Iridosclerectomy, according to La Grange, on the right eye.

May 10: Same left eye.

May 29: Normal operative recovery. In O. S. vision 20-25, with + 50 = — 5 ax 90. One iritic adhesion in each eye and some pigment on capsule of lens.

June 12: Fields as in chart No. 3.

November 27: Tension normal to fingers.

February 6, 1913: Tension O.D. 60, O. S. 22-28 (Gradle).

December 15, 1914: Vision O. S. 25-25 and J. 11, with glasses. Field as shown. Tension 57 and 24 (Gradle).

May 29, 1915: Tension 52 and 24.

November 3: Vision 25-25, with glasses.

Patient died in December, 1916. As the result of the operation, his vision, field, and tension in the left eye were held at a standstill for five and a half years.

A CASE PRESENTING SYMPTOMS OF THROMBOSIS OF THE LATERAL SINUS.

Dr. Ellett reported the following:

In February, 1904, Mr. P., aged about forty, consulted me for a pain in his forehead of three or four days' duration, following cold. There was a profuse golden-yellow discharge from the nose, which came from under the middle turbinate. Transillumination was negative. He promptly recovered; and on December 2, 1908, I saw him again with similar symptoms of four or five days' duration, with profuse discharge from the right nostril. On the night of the 1st the right ear began to pain. There was pus coming from under the right middle turbinate, and the right antrum was dark. The right membrana tympani showed evidences of acute in-

flammation, and was incised. The pus which escaped did not show any organisms in the smear. For two weeks the ear continued to run, and the patient had an anxious look and sallow color. On the morning of the 13th, at 2 o'clock, he had a chill. At 10 o'clock the temperature was 99 degrees, and he had no pain. There was a slight antral tenderness, the canal was swollen on the posterior wall, and there was still a slight discharge. I have no note of the nasal condition or of the maxillary antrum. At 11 A.M. he had a chill, and the temperature went to 103½ degrees. The blood showed leucocytosis and no malarial organisms. Urine 1030, cloudy from phosphates and urates. No albumen or pus. A diagnosis of sinus thrombosis was made and operation urged. It was declined; and when I saw the patient last, on the 18th, he was at work, but still had pain in the ear and some discharge, but no more chills or fever.

TANSLEY'S OPERATION FOR UNILATERAL PTOSIS.

Dr. Ellett reported the following case:

Tansley's operation for unilateral ptosis in a boy nine years old. He prefers, as a rule, to do a Mota's operation, but in this case it was not applicable on account of the paralysis of the superior rectus muscle. Photographs were shown to illustrate the result.

SARCOMA OF THE NASOPHARYNX.

Dr. A. C. Lewis reported the following case:

Miss M., aged twenty-five years, was sent to me on December 21, 1916, with the following history: Last June the left ear became suddenly closed, causing a sensation of fullness and deafness in that ear. This was followed by pain, neuralgic in character, and almost continuous throughout the left side of her head. Cannot sleep at night without some kind of a drug. Her father is a physician, and she has been treated continuously by a number of doctors and specialists of different kinds. Her left eardrum was congested and thickened, and showed a small scar below, where a paracentesis had recently been done.

With a nasopharyngeal mirror, an irregular-shaped tumor from 15 to 20 m.m. in diameter was seen growing from and covering the mouth of the Eustachian tube. A piece of this was removed and sent to the pathologist (Dr. William

Krauss) for diagnosis. He reported small, round-cell sarcoma.

We advised her father to send the patient to Johns Hopkins Hospital for Dr. Howard Kelly's radium treatment, which he did at once. Dr. Kelly has reported to the young lady's father a most gratifying improvement, and thinks she has a good chance to recover.

EMPYEMA OF THE LEFT ANTRUM.

Dr. Richmond McKinney reported the case of a woman, aged thirty, who had come to his service at the Baptist Memorial Hospital some three years ago, with an empyema of the left antrum, which she had had for several years. This had been treated by a dentist in her home town, in Mississippi, by irrigation through an opening made into the antrum after extraction of the second bicuspid. This treatment proved unsuccessful, the discharge continuing profuse, with considerable swelling of the tissues over the antrum and a regular septic temperature rise. Operation by Dr. McKinney at this time consisted of the customary opening through the canine fossa, the opening being made large enough to introduce the little finger readily, with curettement of the entire cavity. The outer antral wall was found very necrotic, breaking down with the slightest pressure, and the cavity was filled with foul-smelling pus. The anterior half of the inferior turbinate was removed and a large counter opening made for drainage. The external wound was closed with sutures. The woman left the hospital after three weeks, practically well, on the road to recovery.

A few days ago this patient returned to the hospital, stating that she had done very well until recently, when she seemed to have a return of the old trouble. There was considerable swelling of the face, with discharge of foul-smelling pus from the opening into the inferior meatus, which had remained quite patent. A radiograph made by Dr. Lawrence revealed a peculiar condition. Lying in the antrum, across the floor, was what appeared to be a small tube; and upon further inquiry of the patient it was learned that the dentist had irrigated through this tube, which had been placed in the opening up through the superior maxilla for drainage, but that she had not noticed its disappearance. The antrum again was entered externally, as before, curetted very thoroughly, a great deal of floc-

culent, foul-smelling pus being drained out, and a gold tube removed from the antrum, it lying as shown by the radiograph. The opening into the inferior meatus being amply large for drainage, the external wound was closed with suture; and the patient now is doing quite satisfactorily, daily irrigation through the nose being practiced.

Dr. McKinney said that he did not know whether this tube was in the antrum at the time of the previous operation or not, for no radiograph was obtained at that time, and the patient does not give a very clear history from which this could be determined. Two or three very necrotic teeth were extracted from the diseased side by him at the time of the first operation, and he scarcely regards it as probable that the tube could have been in the original opening made by the dentist at that time without his having seen it; and, furthermore, he could not understand, in view of the thorough curettage given the antrum at the first operation, how the tube could have failed to have come away if it had then been in the position in which it was found at the time of the second operation. Also he marvels that it did not come away through the large opening into the inferior meatus, but presumes that this was due to the fact that, although it was made of very thin gold, it was sufficiently heavy to hug the floor of the antrum and not float out with the pus. The case emphasizes the value, with which, of course, all are conversant, of having a radiograph prior to all sinus operations.

BOOK REVIEWS.

THE DIAGNOSIS AND TREATMENT OF ABNORMALITIES OF MYOCARDIAL FUNCTION.

With special reference to the use of graphic methods. By T. Stuart Hart, A.M., M.D., Assistant Professor of Clinical Medicine in the College of Physicians and Surgeons, Columbia University; Visiting Physician to the Presbyterian Hospital in the city of New York. Illustrated with 248 engravings, 240 of which are original. The Rebman Company, New York. 1917.

In the preparation of this work the author has drawn largely from his own extensive work in cardiac diseases. The numerous references to the writings of many other investigators in this field show a careful study of the existing literature. As a result, he presents in brief form the gist of the present knowledge of myocardial conditions. Each day the value of the

polygram and the electrocardiogram is being better appreciated; and a perusal of this book not only emphasizes their importance as diagnostic aids, but stimulates a desire for a better knowledge of them. While much space has been devoted to graphic methods, the clinical side has been so handled that this work is of especial interest to the busy practitioner. The matter of treatment of myocardial conditions is fully discussed, and in this, as in the matter of diagnosis, the author lays great stress, and rightly so, upon the individualization of all heart affections. The book is well written, very readable, and is well worth the careful consideration of those interested in internal medicine.

PRACTICAL MEDICAL SERIES. 1916. Volume IX. Skin and Venereal Diseases. Edited by O. S. Ormsby, M.D., and James H. Mitchell, M.D., Year-book Publishers, Chicago.

This is a very splendid review of the 1916 literature on subjects pertaining to diseases of the skin and venereal diseases. Some splendid illustrations are included, and greatly increase the value of this volume. The index is well compiled. The editors' notes are not as frequent in this volume as in others of this "Series," which is to be regretted.

CLINICAL AND LABORATORY TECHNIC. By H. L. McNeil, A.B., M.D., Adjunct Professor of Medicine and Instructor in Physical Diagnosis, University of Texas Medical School, Galveston, Texas. Ninety-six pages, illustrated. Limp cloth. The C. V. Mosby Company, St. Louis, Mo. 1916.

In this manual the author emphasizes the importance of careful history taking and thorough physical examination. The technic of the ordinary laboratory tests is described clearly in the fewest possible words. The interpretation of the findings is left to the user, the author assuming that the diagnostic value of these findings is appreciated by the user. As a handy laboratory guide, this book is a valuable work for both students and the busy practitioner.

PRACTICAL URANALYSIS. By B. G. R. Williams, M.D., Director of Wabash Valley Research Laboratory, author of "Laboratory Methods," etc. One hundred and forty-two pages, illustrated. Limp cloth. The C. V. Mosby Company, St. Louis, Mo. 1916.

This is a brief outline of uranalysis. The various urinary tests are given, and the author has well noted in many instances the causes for error in the interpretation of findings. He has also brought out many minor points of importance that are often overlooked in performing urine examinations. A careful study of this manual should help all to more accurate work in this particular field.

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THE TREND OF THE TIMES IN MEDICINE AND SURGERY.*

BY CHARLES NORRIS COWDEN, M.D.,
Nashville.

Tradition and precept have decreed that I, as your presiding officer, shall address you upon this occasion, and from this decree there seems to be no honorable way of escape. I have been full of doubt and misgivings as to my ability to serve you in this capacity, and I shall feel, as doubtless you will also, a sensation of relief when the ordeal is over.

First, permit me to acknowledge again my sincerest and most heartfelt appreciation of the distinguished honor that you conferred upon me last year at Knoxville when you elected me your President for the ensuing year. To be counted by the members of this association as fit, even to a very limited degree, to occupy this position that has been made honorable by great men in Tennessee who have filled it and whose presence at our annual assemblies we are still permitted to enjoy, and which, too, has been made illustrious and hallowed by the immortals who have gone on before and are now resting from their labors "neath the shade of the trees," is a signal honor to any one, and in this instance, I fear, an unmerited one. All that I can ask is that you believe that I have done the best that I could and that you throw the mantle of charity around my shortcomings.

The selection of my subject was no small task, for I felt myself barred from the wide range of topics which form the basis of discussion in the regular meetings. If I felt myself capable, I did not deem it the better part of wisdom to

delve into some technical or scientific subject simply to magnify the office or attempt to display knowledge and erudition which I very much fear that I do not possess. These addresses sometimes take the form of reminiscences, in which we try to revive the past through which we have toiled and labored; but not being old enough to reminisce interestingly, I thought I would cast into the future and see if I could not foretell by the signboards of the present the trend of the times in regard to the questions in which we are all so vitally interested.

Each age has had its problems to work, and at the end of time there will be found men eager and ready if need be to yield up their lives in their solution. Although our profession has achieved many victories in the past, they act only as an incentive to stimulate us to greater effort in the solution of many questions of vital importance concerning which we are standing on the very threshold. Ours is a rich heritage, for we are living in a great age in the history of medicine and surgery; but the deeds, the accomplishments, and the preparation of yesterday will not suffice for to-morrow—nay, not even for to-day.

Thought is changing. Theories are being uprooted. Science is being rewritten, and a man must run as fast as he can to stay where he is. He must keep abreast of the age, and his thoughts must be in the present tense, even down to the very last moment of time. If not, one is handicapped, run over by the spirit of progress, and must go on the shelf with old musty, out-of-date volumes of yesterday. The day of the dreamer is past, and no one knows this better than the doctor of medicine. His mission is age-old and world-wide. Medicine touches every phase of human existence, and it is alike necessary to the savage in the jungle as it is to the highest degree of civilization. It is the one uni-

*Presidential address, delivered before the Tennessee State Medical Association at Nashville, April, 1917.

versal doorway by which you can reach all mankind. It began with the creation of man and will cease with the end of time, when it will sign the death certificate of the world.

The members of our profession are only units in the great plan for the healing of the nations, and they have played the rôle of "stars" in many of the dramas in the history of the world. They come upon the stage of action. They play in a coöperative way, interpret every phase of human experience, strive to leave all their best wisdom to their understudies, make their exits, and crave, above all things else, to have it said that they lived to bless mankind.

The long and intimate acquaintance of the doctor with the lights and shadows of humanity gives him a rich fund of experience that fills every day of his busy life full to the brim, and these experiences can never be duplicated or erased from his memory. They are gathered from the hut or the hovel, where the withered hand of poverty and want is oft outstretched in gratitude for services rendered in dire distress; or from the homes of affluence and plenty, where his ministrations are equally estimated at their true worth and call forth the same degree of gratitude. This homage is rendered alike to the high and low in our professional ranks. There has never been a doctor, no matter how little skill and ability he may have possessed, but that to some one has been the greatest physician in the world. It is this implicit confidence and trust in us from our patients that calls forth in every true physician the very best effort that he can command or put forth. They have trusted us with their all; can any one deny them all—yea, more than all—in return? This is the highest conception of our duty, and no one within our ranks has failed to feel its mighty clutch upon his heart. Here is where we, as a profession, tower far above any other profession or calling. The Hippocratic oath, penned far back in the distant past, has spanned all of the centuries and come down to us laden with a responsibility imposed upon us by the father of our science, binding us by a stipulation and an oath, according to the law of medicine, that we impart all the knowledge that we possess to our professional brethren. Education and enlightenment have been the foundation of our science since its birth, and this is why Hippocrates made it obligatory to teach everything we know to each other.

The trend of the times has always been toward higher education and better mental equipment, and to this end the last decade has outstripped any century in real advancement. In 1904 the American Medical Association established what is known as the Council on Medical Education, the object being to elevate the standard of medical teaching. Since its inception it has endeavored in every way to raise standards, and as a result of its labors there has been constant improvement. Particularly has this been true in the last few years. Commercial medical schools were being conducted all over this country, and they were flooding the profession with numbers of incompetent men. Upon investigation, the council found that there were one hundred and sixty-six medical colleges in the United States, with an average yearly attendance of twenty-eight thousand students and with six thousand graduates each year. Of this six thousand, only six per cent were from high-standard colleges. To-day they tell us that we have only ninety-five colleges, with higher and better entrance requirements, with stronger staffs of full-time expert teachers, more and better equipped laboratories, and more abundant clinical material found in up-to-date hospitals. All the council found necessary to remedy the evil was to start an impartial, thorough investigation of the faculties of the different schools, the extent and efficiency of their laboratories and hospital facilities, etc., and to give the facts to the public by wide publication. They had not the slightest degree of legal power to obtain an investigation of any college, nor to enforce any suggestion or demand; but they had a righteous cause, and they had behind them seventy thousand medical men in this country who saw the truthfulness of their plea. No institution could resist, much less defy, the purposes and motives of such a body. Every one believes that the graduates of to-day are not only better qualified in the science of medicine than those of ten years ago, but they have, because of the college requirements, a broader foundation upon which to build. This ideal standard to which they aspire embraces four years in high school and college, four years in a high-grade medical school, and a year as interne in a hospital. This takes nine years of a young man's life in preparation before he can even start on his career. Right here, in my humble way, I want to sound a note of warn-

ing—not that I do not believe in higher education, but that I believe it is of paramount importance to every man that he should complete his education and begin his life work before he is twenty-five years old.

To be a nonproducer, or dependent upon some one else, at an age when a man can be both productive and independent, is not in keeping with the true American spirit. All a college can do for a man is to train his mind to think, and then give him the broad principles of the science that he has elected to follow and let him blaze away to new fields. If he be only crammed full of the practices of to-day, he awakens to-morrow and finds that the world has moved on apace. If he tarry too long at the fountain, all his problems will have been solved for him and he will be sent in a straight line to the end of his career, with nothing to do but to put into effect that which has been poured into him like filling a jug. He has been cast in a mold and represents the finished product at the very threshold of his life. I would have you recall, if you please, the words of Tyndall: "The greatest discoveries of science have been made by men who have left the region of the known and groped in the darkness for the unknown and followed the imagination in the paths of the unseen."

I looked up the educational attainments of the greatest body of scientific medical men in this country, and found on examination that only six per cent had more than "M.D." after their names; and they are the men who are making and writing surgical history of this country to-day. I do not for a moment believe they are doing it because they did not have their degrees, but they are doing it with the old Norseman's slogan: "Find a way or make one." Every one knows that the cost of maintaining one of these high-standard medical schools has been enormously increased, and the high-standard entrance requirements have very materially diminished the number of students that will seek a medical education. This excess of expenditure over income from tuition has been met, in a measure, by state appropriations, by private gifts, or by rich endowments. In this way the argument used by those who would perpetuate the low-standard college—namely, that the poor boy would no longer be able to obtain a medical education, that a medical aristocracy would be built up for the sons of the rich, that after endowing

the college, in order to maintain the high ideal, they would have to also endow the boy—has all been met, it is claimed, and refuted. To meet this phase of the subject, free scholarships, based upon genuine merit, have been arranged in some of these institutions for the deserving and needy student, and a boy that shows a willing spirit to go to the front can always obtain aid. This plan should be encouraged and fostered, because the moment you place a medical education beyond the reach of any but the man with plenty of means you rob the world of some of its most promising talent. Genius does not oftentimes thrive amid "flowery beds of ease," but rather in the crucible of penury and want. In the school of bitter adversity it is oftentimes polished and burnished till its scintillations dazzle the world.

That there is now, and possibly always has been, a scarcity of medical men far back in the rural districts is a fact that will have to be admitted by all; but it is questionable, however, whether the low-standard school would have ever remedied this, for the inducements here are not even sufficient for a poorly equipped man, and it is clear that no physician will stay in a community where a living cannot be made. Telephones, automobiles, and better roads have brought these communities in close touch with the medical profession of the towns, and this gives them access to a better equipped doctor than heretofore. The goal, perhaps, has not been reached yet in medical education, or, at least, if it has, 'tis only on paper. I would here again sound a faint note of warning. Let us mark time for a while, try this new order of things, and see if this product of the higher educational ideal will be an improvement on the old.

I am in favor of higher education; but, in my humble judgment, there is danger here, like there is with "higher criticism," of matters being carried into a realm far removed from the actual or practical into one speculative, chimerical, or hypothetical. I would remind you that high ideals and lofty purposes alone are not the driving power that moves this world. Without toil and without labor, without long years of earnest effort and honest endeavor, without willingness to make great sacrifice, no success is possible. The student of medicine, after he leaves the college and hospital, must run his course with patience

and long-suffering. There is no surer road to hopeless mediocrity than that which leads a young physician into an active practice before he is ripe for it. He who, after his term of preparation, works patiently year by year, observing disease at the bedside, groping and yearning after unsolved problems with eagerness of soul, is laying the unshakable foundation of a successful career, no matter if he can't write but one degree after his name. He need have no anxiety about the future, either as to money or professional standing. The world needs and is seeking for the man who can render the highest grade of service.

The trend of the times is not only toward the standardization of the medical school, but also toward the standardization of the man. Particularly is this true of the surgeon. The old surgery dealt mainly with the stanching of hemorrhage and the healing of wounds, the reduction of dislocations and fractures and the removal of tumors. All this kind of surgery was comparatively simple, and could be comprehended by any one without very much special preparation. The surgery of to-day deals with the intricate problems of tissue repair and reconstruction, with minute anatomy and physiology, and the restoration of function connected with all the organs of the body, irrespective of their vital significance. It has to do with the newer pathology of disease. As you can readily see, this kind of work demands surgeons of thorough education, special training, and finished technic. Sir Joseph Lister with his aseptic surgery opened the way, and the unleashed genius of the surgical world has surmounted almost every obstacle and given us our modern surgery, which is the wonder and marvel of the age. It has swept on and on to dizzy heights, even to the very citadel of life itself, until we almost stand appalled at the work of our handicraft. The public, who is a party very much interested in this whole question, has heretofore had no standard by which they could measure a man's ability as an internist or a surgeon. It is a well-known fact that men in every community are operating who have no right to take human life into their hands. This does not apply to the general practitioner, who, in an emergency, to the best of his ability operates in an attempt to save life, but to those who, without any special preparation or training, operate in order to increase their income,

and who undertake to do that which should be done only by a skillful surgeon. They do not realize that surgery is a scientific specialty, extra hazardous in its nature. In this day of advancement, none should pose as a surgeon who has not fitted himself for this kind of work. Nobody objects to any one being a surgeon, but the public has the right and should demand of the surgeon the highest degree of mental, moral, physical, and technical equipment. The standard of the surgeon should be elevated above the plane of the seeker after gain, and the public and the profession should hail with delight any movement that offers to elevate the tone and quality of the American surgeon.

To this end and for this purpose was organized a few years ago the American College of Surgeons. It was organized to fill a distinct need, and is well abreast of the time. Its aim and its purposes were so well presented by the first president, Dr. John M. T. Finney, in his inaugural address at Chicago, that I quote his exact words: "The aim of this new organization and the reason for its existence lie in its disinterested and unselfish efforts to elevate the standard of the profession, moral as well as intellectual; to encourage and foster research; to educate the public up to the idea that there is a difference between the honest, conscientious, educated, well-trained surgeon and the purely commercial operator, the charlatan, and the quack. Furthermore, the term 'surgeon' means more than a suave manner, a glib tongue, a private hospital, a press agent, and the all-too-easily-acquired diploma. The standardization of surgery is absolutely essential to guard the public against such as these, as well as to preserve the honor of the guild itself. So far as the public is concerned, it is necessary to protect it from the wolves in sheep's clothing, from those who would prostitute their high office for the purpose of gain, from the ignorant and the untrained, and from those who by reason of the lack of surgical judgment and skill are incompetent. That such are present in considerable numbers in our profession and that they continue to ply their nefarious trade in every community of any size, with reckless disregard of the consequences, unfortunately, cannot be denied. Are we to sit idly by while the fair name and fame of our profession are being dishonored and defiled? Is there nothing we can do to protect the public and our-

selves? The American College of Surgeons has been called into being as an active, vigorous, virile protest upon the part of the profession itself against this unhappy state of affairs."

In these few simple words by Dr. Finney is stated the object and purpose of the American College of Surgeons. As you see, their object and aim is to set a high standard for American surgeons and then demand that surgeons live up to it. Can any one deny that their plea is a just one? They do not limit their membership to men of age and wide experience, but the doorway is wide open to every one that measures up to the standard, and the standard is within the reach of all. They recognize eagerly the progressive, well-educated young surgeon who has had the necessary training and hospital experience to meet the requirements of the college, for it is upon these young men that depends the future success of the endeavor. Mistakes have been made by admitting some who should not have been and by barring some that should have been admitted; but the board of regents is composed of our best men, and they are putting into the institution almost superhuman endeavor. They do not intend to create a clan, a click, or a combine to give any man or set of men advantage over another, but hold up before the world the high ideals to which we aspire. Neither do they say that every good surgeon that is eligible is a fellow of the college or that all who are not fellows are unfit. They do say, however, when they do put their stamp on the man that they indorse him and recommend him to the public as qualified to do good modern surgery. We may fall short of the ideal, but this is no argument that no standard should be raised at all. The "holier than thou" or the idea of a plutocracy is farthest from their thoughts. They are striving for a democracy, but one that towers far above the vision of the commercial operator or comprehension of the unfit. This is a great work undertaken by a great body of men, has already accomplished some good, and is, in a measure, fulfilling the expectations of its sponsors. One of the things that it has done has been to lay bare the pernicious practice of fee splitting. The positive stand the college has taken upon this question alone more than justifies its existence. What has been attempted for the American surgeon is now being done for the American physician. The College of American Physicians is at

the present time being organized, and justly merits its success.

Along with the movements for the standardization of medical schools, physicians, and surgeons should be mentioned another for the standardization of their workshop, the hospital. Is there any reason why this also should not be done? The time is past when you can put a few beds in a dwelling, with a sterilizer and an operating table, and call it a "hospital." A hospital of to-day means a well-equipped institution, thoroughly organized in every department, that has as its main feature the modern laboratory under the care of competent pathologists and bacteriologists, X-ray apparatus, and modern operating-room equipment. Add to this a staff composed of skilled men who are honestly living up to the highest conception of the purpose of the hospital—i. e., the relief of suffering humanity and the training of medical students and nurses—and you have the ideal hospital that the profession and the public are demanding.

The public is learning to discriminate between the good and the indifferent, and is beginning to realize that a palatial operating room and elaborate bedroom furniture does not always mean a careful diagnosis, well-trained nursing, and efficient bedside attention. The hospitals that are first to read and heed the signs of the times will save themselves a rude awakening to the fact that the better class of doctors and the better class of patients are seeking better equipped and better managed institutions. Team work is becoming more and more effectual, and the pace is so rapid at the present that few men are to be found who can at one and the same time fill all the positions.

Everybody recognizes that the modern hospital is a factor of great importance in the affairs of every community. The financial burden of most hospitals is a matter of grave concern. The question in the city is how to better equip and increase the efficiency of the hospital, and, in the smaller towns and cities, whether one can be started and maintained. In small communities far removed from the large centers the small hospital, furnished as far as possible with modern equipment, with a staff composed of five or six members of the local profession, all pulling together and striving to fit themselves in a special way in some branch of the practice, is a step far in advance of no hospital at all, and one that

can be made a success. The man that undertakes one single-handed and alone, no matter where located, faces a tremendous burden, for he comes in competition along many lines wherein he is not well trained.

Everybody to-day realizes and feels that the practice of medicine, with all of its scientific scope, is fast becoming highly specialized. While the majority of people with ordinary diseases are satisfactorily and efficiently treated by the family physician, as soon as they become seriously sick with any one of the large number of ailments, with complications, they are no longer satisfied in the hands of the average doctor, and they are demanding that they be given the benefit of the expert specialist and the modern hospital. The family physician without access to these institutions realizes that he is handicapped and is himself anxious to shift the responsibility. Some one has said that only two classes are to be found in our hospitals—the poor and the rich. If the patient is poor, he can be referred to a public ward in the hospital and get all the benefits for nothing or for a small hospital fee; if he be a man of large means, of course he has no difficulty; but if the patient is a member of that largest class—those in moderate circumstances—he cannot afford the expense of such service and his pride prevents him from going into the public ward. This man constitutes the backbone of the community in which he lives, and he is entitled to the best that can be had.

The public is fast becoming educated up to the hospital idea, and the times are demanding either a well-equipped, small community hospital, under the care of a competent staff, or increased efficiency and facilities in the metropolitan centers. How to secure it is one of the vital problems of to-day; and the industrial, financial, and social world are seriously working for its solution. One of the possible solutions of the question, as indicated by the trend of the times, is through some form of social insurance. This is no academic question. In England and Russia some form of health insurance is compulsory upon all heads of families with an income of less than eight hundred dollars per annum. Some of the plans provide that one-fifth of the premium be paid by the state, the other to be equally divided between employer and employee. This is handled by a commission under strict governmental supervision, and permits all reputable

physicians to be enrolled in the scheme in order that the insured may select his own physician to administer to him. The plan not only furnishes medical and surgical service to the insured, but medical supplies also and hospital treatment and maternity benefits. The plan would also include health and sanitary education among the masses who are so sorely in need of such teaching and information. Factories, mines, railroads, and other corporations that are large employers of labor deem it good business to provide an organized medical service for their laborers. Then why should not the state foster and aid such an enterprise? The question is too broad and would lead me too far afield to go into the minute details of it. To many of you, I am sure, the question is an entirely new one, and, at first glance, would seem to be an Eutopian dream; but I am convinced that many of us will see some such plan in operation in each of the individual states. What I want to impress upon you is that the medical profession study the problem thoroughly and be ready to do its part in drafting satisfactory legislation upon the question that will be in keeping with the high ideals of the profession and that will accord with our sacred duty—the care of the sick. The conflict is soon to come here, as it has in Germany, between the profession and the health-insurance organization. If we go to sleep at the switch, we will have only ourselves to blame for being sidetracked, and we will be handed the raw end of the deal.

Again, the trend of the times is toward more and better research work. Heretofore the brightest men in the profession had to give their time to making a living by the use of their knowledge and skill. Prior to fifteen or twenty years ago gifts or endowments for medical education or research work were almost entirely unknown. Since then true philanthropic men and women have made donations to this cause, and in many instances state aid has been enlisted. As a result, we have the means to employ the best talent for research work, to improve our laboratories, and to increase our efficiency in every way. What a change has taken place in research work and medical teaching in the past few decades! The old didactic lecture has gone to the scrap heap of medical junk, and only a few years ago research work was limited to a few tests in the clinical laboratories or a small number of experiments tried upon the dog. Here

is where we have climbed highest and accomplished most. We have but to compare the old accepted theory of the cause of some of our well-known diseases with the present-day etiology, and the advancement is almost beyond comprehension. Anæsthesia, the germ theory of disease, our modern physiology and pathology, aseptic surgery, our antitoxins and immunizing serums and vaccines, our wonderful X-ray apparatus, our modern sanitary laws, are only a few things that our profession, working on opposite sides of the globe, has accomplished. The knowledge that has come to us from research work has carried us to dizzy heights, and the world stands by in wonder at the onward march toward the realization of Pasteur's dream, in which he looked down the ages and saw all the infectious and contagious diseases driven from the world. All this knowledge gained has been applied to the prolongation of human life and the alleviation of human misery.

Research is one of the leading features of every high-grade medical school, and vitally interests every student of the healing art. It is inseparably linked with preventive medicine. The idea of blazing a trail away from the beaten path for future generations to follow is strong in every breast, and this branch of the science that has to do with public health and sanitation has more pathfinders at work to-day than in perhaps any other field of medicine. It is the keystone in the triumphal arch of modern civilization, and its displacement would precipitate mankind in a short time into relative barbarism. We know enough now, as demonstrated by Gorgas and Wood, to reclaim even the pestilential valleys of the Tigris and Euphrates, where we could rebuild amid the fallen towers and temples of ancient Nineveh and Babylon the ancestral homes in which the cradle of civilization was rocked and make them choice habitations of man and centers again of learning and culture.

Should the health administrators of any metropolis fail for a few months, the history of the epidemics of the past would be repeated. All this being undeniably true, it is a lamentable fact that a great many medical men know less about hygiene and sanitation and things pertaining to public health than a great many of the intelligent laymen. With advancing knowledge among the masses, these professional fossils will be correctly labeled and will be shelved in the

local museum of antiquities. Medical education costs more in time and money than that of any other profession, and the returns in dollars and cents to its followers decrease as preventive medicine becomes more effectual. No other body of men pays so heavily the great cost of eradication of diseases as the physician, but this is the highest function of medicine, and no sacrifice is regarded too great.

Be it said to the eternal credit of the people and the doctor that there has never been a time when preventive medicine had so many and so appreciative helpers as it has to-day. Our sanitary laws are, for the most part, good; but their administration is poor and half-heartedly done. Rural sanitation is only in its infancy, and infant mortality and control of infectious diseases are important questions that are being agitated everywhere. Our vital-statistics laws are in the right direction, but they are neither complete nor trustworthy because of the lack of full coöperation upon the part of the public and the profession. Our health boards, we regret to say, are too often composed of political "has beens" and the office prostituted to pay some political debt. Our health officers are too often doctors who have failed at everything else, or are ignorant and incompetent laymen of limited knowledge upon sanitary measures, untrained, poorly paid, and with no executive or organizing ability. They should be absolutely free from party dictations, and our health boards should be made up of men both qualified and interested in the work. The funds that are appropriated for this work are far too small and niggardly, and should be vastly increased; for good health, in a sense, is a purchasable commodity.

Last, but not least, the trend of the time is for medical organization and medical preparedness. Heretofore our forces have been scattered and our influence practically nil in shaping and directing the welfare of our people in regard to all health matters. We are realizing more and more the weight of our influence and the power of thorough organization. When we get sufficiently together and put our plea before the American people, showing the benefits to the nation of sanitation and public health, and then demand recognition in the Cabinet as a separate and distinct department of our government, it will be forthcoming and will fill one of our greatest public necessities. Politicians never

lead; they only fill a long-felt want or put into effect movements for control of matters that cry aloud from the housetops. They are best educated under pressure, and this pressure is best applied by the doctor. With thorough organization upon our part and a thorough understanding among the members as to just what should be done, we can begin an educational movement among our citizens which will secure results without the firing of a gun or the issuing of a bond. The American nation is composed of a practical citizenship; and when shown the great economic saving, not only in health and life, but also in dollars and cents, that will result from a national department of public health, they will respond at once and give the idea their aid and support.

Medical preparedness is the burning question of the hour. At this very time, when all the world is aflame, with a state of war at our very threshold, we are called upon to prepare ourselves to render to our nation services that only we, as a profession, can give. The patriotism of our profession has never in the history of the world been questioned, but upon every battlefield we have acquitted ourselves with credit and honor. We have ever been ready to follow the flag, and the strange part of it is that it does not matter which flag it is, as our services are rendered alike to friend or foe. We pass every sentry without challenge, because we are upon a mission of mercy that meets a ready response in every human heart. The volunteers in our ranks are ready, and we are only waiting the command to take up the work.

We have planned wisely and wrought well, but the pathway to our present success has not been one that has led through fields of sunshine and luxurious ease. Every foot of the way has been chiseled through the granite wall of ignorance, superstition, and doubt. It has been bought with the brain and the blood of its devotees, and the trail is marked by the bleaching bones and the low green mounds of those who perished in search of the eternal truth or tried to pry into the secrets of disease in order to serve mankind. No monument or shaft marks their resting place, no bust in halls of fame; but written in the hearts of the people, more lasting than if on bronze or stone, is the silent homage and the loving gratitude of a people rescued from the polluting hand of disease and premature death. Over yonder,

when we stand in the clear sunlight of God's eternal knowledge and truth to give an account of our talent, may we, as a profession, hold within our hands the keys that will unlock for us the gates to the eternal city that is built out of jasper and gold.

TRACHOMA.*

By A. F. RICHARDS, M.D.,
Sparta.

The term "trachoma," which signifies a roughness of the conjunctiva, has been in use since the days of Hippocrates, and there is good evidence that the disease had been in existence and described a thousand years before Hippocrates. In Egypt, Boldt has said that "trachoma is as old as the Nile, the simoon, and the desert." In Egypt trachoma is ubiquitous, and affects more than ninety per cent of the population. It also prevails in Arabia, Armenia, and Syria; and the immigrants from these and adjacent countries supply the cases of trachoma that, under existing regulations, upon their arrival here, have to be deported from the United States.

Trachoma, or granular conjunctivitis, as known in this country, is a contagious, specific disease of the palpebral conjunctiva, characterized by increased thickening and vascularity and the formation of granular elevations or lymphoid infiltrations which undergo ulceration and subsequent cicatrization.

Diligent search has been made by competent observers for the microorganism to which trachoma is due, but without success. There is such a thing as "trachoma bodies"—not, strictly speaking, bacteria, but spoken of as the specific cause of the infection.

Trachoma is found mostly in asylums, almshouses, and places where the people are careless in the use of the articles of the toilet—such as towels, handkerchiefs, and personal articles—and are personally unclean. However, none are exempt, and the most cleanly are sometimes victims of this loathsome disease. All people, so far as I know, are subject to it except the American negro, who seems to have some immunity to the infection; while the most susceptible peo-

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ple in our country are the Indians, probably sixty-five per cent of whom are infected.

The disease is usually chronic, although occasionally acute cases may be observed in which there are marked inflammatory symptoms and profuse purulent secretion, the severity of certain attacks being probably due to a concomitant acute conjunctivitis or an exacerbation of the symptoms as the result of freshly developing follicles. These cases resemble purulent conjunctivitis, and often the diagnosis must be withheld until the granulations are visible. It is usually bilateral.

In many cases the initial course of the disease is so insidious that the patient is not aware of its presence until it is well developed. The changes in the palpebral conjunctiva are slowly progressive. The membrane becomes thickened, vascular, and roughened by firm hemispherical elevations. This change usually takes place first in the upper lid, later extending to the lower, giving rise to the growth of considerable organized new tissue in the deeper parts of the conjunctiva. Externally, edema and vascularity of the lids are noticeable, while the ocular conjunctiva is congested and has an angry appearance. Slight photophobia and lacrymation are present, and a "gritty" feeling, due to the roughened condition of the palpebral conjunctiva, is experienced by the patient. If the lids be everted in the early stages of the affection, the surface is found covered with small granular bodies, which look very much like small sago grains, scattered or massed together (follicular trachoma), constituting the chief feature of the clinical picture. In the later stages this tissue is partly absorbed and partly converted into dense tendonous scar tissue, which, by its shrinking, very often produces deformities of the lids. In all cases the eyeball is greatly irritated by the roughened surface, producing a host of resultant troubles by mere friction. In many cases the inflammation is intense, the discharge profuse. The cornea becomes involved early, and only prompt and vigorous treatment can prevent complete blindness. A mixed infection may exist with the trachomatous process. Koch, in Egypt, found both the gonococcus and what is now classified as the Koch-Weeks bacillus in the discharge from the conjunctiva. The trachoma granules in some cases are deeply imbedded beneath the thickened opaque conjunctiva or in the masses of the fibrous tissue that

have developed in the lid, so that they can hardly be seen, if at all (papillary trachoma). The lid becomes swollen and drops by reason of its increased weight. The palpebral tissues become more narrow than normal. There is always a mucopurulent discharge, considerable in amount in acute cases and scanty in those of long duration.

The troublesome sequelæ of trachoma are all natural consequences of the friction of the roughened palpebral conjunctiva. As a rule, the mere removal of the causal condition affects their disappearance. In certain cases, however, this is unfortunately not true. The cicatrices following the absorption of the granulations may so "pucker" the conjunctiva as to draw the edge of the lid inward, producing trichiasis or entropion. In either case the friction is greater than that directly due to the trachoma. The most frequent and troublesome sequel of trachoma is pannus. Corneal ulcers, staphyloma, and symblepharon may also occur.

Treatment.—Various medicaments of an astringent character have long been employed in the treatment of trachoma. Among these are various solutions of the silver preparations—the nitrate of silver, protargol, argyrol, etc. Copper sulphate has been used by many in preference to all other applications, and in the milder forms of the disease happy results have been achieved with this and other astringents when continued for a sufficient length of time.

It is sometimes possible to hasten the cure by everting the lids and excising the granular formations with scissors or by scraping the tissue down to the basement membrane with scoop and scalpel. The tendency in the present day is to treat the more chronic and obstinate cases by some surgical method which will bring about a rapid disappearance of the granulations and correct the distorted condition of the eyelids.

My treatment, as followed ordinarily, is to use nitrate of silver in some form and strength when the condition is acute; but if the cornea is involved, such treatment is used only as the condition will warrant. Atropin is more often needed in corneal involvement than any other one drug. When the case has become chronic, I have found more good in the sum total of treatments in the use of the solid stick sulphate of copper. When the granulations are present and the lid thickened, I always resort to some sort of sur-

gery—the Knapp roller forceps, grattage, followed by cotton mops on toothpicks dipped in 1 to 500 bichloride and then followed with the application of sulphate of copper stick every other day. The treatment is slow and tedious, and, as Fuchs says, “it is so slow that the patient and the doctor both become discouraged and quit before a cure is effected.” I have had this to occur repeatedly in my practice.

To my mind, the best surgical results are obtained now by the method of grattage described by L. Webster Fox, of Philadelphia: “Two instruments have been especially devised for this procedure—a forceps and a scarificator. Any operation that has for its aim the destruction of the granulations must be commenced by the complete exposure of the palpebral conjunctivæ, including the retrotarsal folds and the culdesac of the upper lid. This is best effected by means of the Darier forceps, an instrument that resembles a catch-dressing forceps, with three pins on the male blade. When the instrument is closed, the pins pass through corresponding openings in the opposing, or female, blade; and their points, piercing the eyelids, prevent slipping when complete eversion of the lids is made. The second instrument is a tri-bladed scarificator or scalpel. The outside blades are jointed so that they may be easily turned when being cleaned. They are securely held in place within a platinum handle and make parallel incisions.

“The operation is performed in the following manner: The upper eyelid is grasped along its margin by means of Darier’s forceps, and, the edge being turned upon itself, the lid is everted until the retrotarsal fold is brought into view. A horn spatula should be inserted beneath the lid to protect the cornea. The exposed conjunctiva is first thoroughly scarified with the three-bladed scalpel. The granular tissue is then scrubbed with a toothbrush that has been steeped in a corrosive sublimate solution (1:1000) just before being used. Immediately after scrubbing the part is washed with a solution of the same strength. Another portion of the lid is then unrolled, and the scarifying, scrubbing, and washing are repeated. This process is continued until the whole palpebral conjunctiva has been subjected to the treatment. If the lower lid is involved in the trachomatous process, it should be treated in the same way.”

In the soft gelatinous or adenoid variety a

simple gauze sponge will be sufficient to smooth the lids without any instrumental interference except the forceps to evert or roll back the lid, for which, in the absence of Darier forceps, I use a mouse-toothed dressing forceps. Fox, of Philadelphia, refers to the successful use of sand-paper soaked in a sublimate solution. The greatest surprise to me is that there is so little swelling from such treatment. This is due, however, to the bichloride solution, which renders all bacteria coming in contact with the operative field inert.

The French method of repeating the bichloride scrubbing, the extirpation of the tarsus in chronic cases as recommended by Kuhnt, and the cutting through the cartilage from outer to inner canthus as recommended by Burrow, are all methods I have not tried, and, therefore, am not willing to discuss them.

DISCUSSION ON THE PAPER OF DR. RICHARDS.

DR. CHARLES HUFF DAVIS, Knoxville: Trachoma, like the poor, is always with us and is often associated with the poor. It is a practical and very important subject, because we see this disease quite frequently, and especially is it prevalent in this section of the South. Dr. Stucky, of Lexington, Ky., traveled all over the eastern portion of Kentucky, studying and investigating this disease; and, as a consequence of his reports, the United States Government has established hospitals in various places for its treatment. His investigations did not include Eastern Tennessee, Southwestern Virginia, Western North Carolina, nor the southern portion of West Virginia, where the disease is very prevalent. I have taken up the matter of establishing government hospitals with our Congressmen, with the idea of having the public-health service treat the situation in a systematic way, and I have some show of success.

Trachoma is essentially a chronic disease. I was called down once in a society meeting for making the statement that I did not believe that I had ever seen a case that was cured. This was in Greeneville. A brother practitioner was talking about how he could cure cases of trachoma, just like Dr. Jones (Knoxville) spoke of the immediate cure of dacryocystitis, in one treatment. I suggested, and now suggest, that trachoma is a recurrent disease; that acute attacks come in the spring and fall; and that the amount of destruction caused to the eyes was in proportion to the amount of inflammation these patients have and the length of time the disease continues, or keeps on generating and recurring. With each successive attack there is more destruction of tissues, and it is the destruction of tissue that we want to avoid. This scar tissue undergoes contraction, ultimately brushing the lashes against the cornea, and the cornea changes from its epithelial tissue

and its albuminous circulation to a mass of pannus, with organized blood vessels. The treatment is usually very satisfactory during each attack. We can do wonderful things for trachoma, and inside of forty-eight hours make a change for the better. The patient feels better, the inflammation subsides, there is less photophobia and lachrymation, etc., and the patient is apparently over this attack; but most often the patients come back or they go to some other physician, with the feeling that the treatment has not been successful.

The treatment Dr. Richards has suggested is the standard treatment for this disease. With reference to the use of sandpaper for the removal of the trachomatous bodies—I believe it was suggested by Dr. Fox—you know the more you wet sandpaper, the more the sand detaches. I think this treatment is barbarous, and comes under the head of removing foreign bodies from the eye. I have used carborundum sticks, and have reduced the trachomatous granules with them.

I think the Gruening method of actually cutting out or scarifying the pannus blood vessels from the cornea is better than any other method I have tried for the relief of pannus. This also predisposes toward the cure of the corneal ulcers that form so readily in pannus. Dr. Gruening literally scrapes off the fibrous mass, obliterating the blood vessels and doing away with coloring matter.

Nitrate of silver should be used with care in these cases. There is no preparation imitating nitrate of silver that in the least takes its place. This includes argyrol, protargyl, and all the other products put out by the proprietary houses purporting to be of service in lieu of nitrate of silver.

The use of atropin has been referred to, and is very desirable to stimulate the corneal circulation and keep down the predisposition to form corneal ulcers, and it does away with secondary iritic inflammation, which may be sympathetic or infectious.

The cause of trachoma is not exactly understood. Numerous attempts have been made to isolate the microorganism or germ of trachoma in the laboratories; but I have not seen the microorganism itself, and I do not know of any one else who has seen it. Our experience, however, teaches us that it is a contagious disease.

There are certain agencies we can use that will relieve the friction of the erotic condition of the conjunctiva and cornea. I do an external canthotomy on all these cases, because the contraction interferes with recovery. Canthotomy gives the patient's eyelids more play, and you must take cognizance of the fact that when the contraction has taken place there is much pressure and friction.

DR. E. C. ELLETT, Memphis: Some years ago, when I was house surgeon in Wills' Eye Hospital, one of the surgeons was a Dr. Hall, an elegant gentleman, concerning whom, perhaps, very few of you have ever heard. He used to tell a trachoma story. He had a big clinic room. The surgeon would sit in a chair, with his back to the window, and the patient would sit on a stool in front of him. A man came in one day, walked up to him, and said: "Doctor, how long will it take to

cure my eyes?" The doctor everted the lids and said: "Six months." The fellow said, "Hell!" and walked out. That was the end of that consultation. At the end of three months that fellow returned, with his tail between his legs, metaphorically speaking, and was looking for a man to cure him in six months.

That story illustrates very well the chronicity of trachoma and what these people have to go through with frequently before they are cured. Whether they are cured or not depends upon what is meant by the word "cured." If the conversion of the lid into a smooth surface, without showing any granulations on it and without any symptoms referable to the trachoma, is a cure, I can show anybody that is interested a great many cases of cured trachoma. They have scars on their lids. You can look at them and go on the witness stand and testify that that man had undoubtedly trachoma.

Acute trachoma can be cured without leaving any trace whatever. I have a girl at home under observation. She is an operating-room nurse in one of the hospitals, and I see her frequently. Seven years ago I treated her for acute trachoma. We agreed on the diagnosis, and found that she had trachoma bodies, to which some importance was attached, though finally these bodies have been decided not to be of great value as a diagnostic point. Anyway, she had them, and she was perfectly cured. Her eyelids are absolutely normal, which, of course, would not be the case in chronic trachoma.

Dr. Richards did not read that part of his paper dealing with the diagnosis of the disease, which is very important, because, to my mind, a great deal of the "hullabaloo" raised in the mountainous portions of this country is based on erroneous diagnoses, and much of the strife stirred up by the school inspectors is based on erroneous diagnoses. They call follicular conjunctivitis "trachoma," but there is a great difference between the two diseases. These differences we do not need to go into at this time. I have seen many cases diagnosed trachoma that, according to my conception of it, were nothing but cases of follicular conjunctivitis, and got well without any bad results.

I have never noticed the spring and fall return of this disease that Dr. Davis speaks of. Of course we all see cases in which there is a recurrence of the disease, but these recurrences are rather irregular.

DR. CHARLES HUFF DAVIS, Knoxville: I want to put myself right on this one proposition about the incurability of trachoma. I did it more to bring out a discussion on this subject. I believe acute cases of trachoma have been and can be cured, and these were not errors in diagnosis. But each attack destroys essential tissues. I have had cases under my observation for fifteen years who have not had a recurrence of this disease.

DR. E. L. ROBERTS, Nashville: Some four or five years ago I wrote a paper on trachoma to read before the Middle Tennessee Medical Association, desiring to bring out more than anything else the necessity for a closer observation among the general practitioners for

trachoma and a more careful diagnosis. I remarked to Dr. Savage, in connection with that paper, that I did not have anything to say about the treatment, and he said that I had left out the most important part of the entire subject. In this instance the essayist has left out an equally important part, and that is the diagnosis of the disease. We—and by that I mean all the medical profession—are up in the air, so to speak, regarding the diagnosis of trachoma.

As Dr. Savage has said, I am medical examiner for the Nashville public schools. I have found a great deal of disease on the eyelids of the pupils that looked like trachoma or what some physicians would call "trachoma." I have been doing this examination work for eight years, and have tried to learn to make a diagnosis of trachoma; but I have not succeeded.

Some three years ago I had an opportunity to observe some of the work of Treacher Collins and other old and experienced men at Moorefields, and I made it a point, above other things, to watch their examinations and watch their diagnosis of trachoma. I found out that men with their broad knowledge and long experience in seeing case after case of trachoma were in doubt sometimes as to whether it was trachoma or not, and they would say, "We will watch this case further;" and in a number of cases they would turn to the American physicians present and say: "What about this? Would you let this patient go into your country with his eyelids in this condition?"

How do I know we are in error in the diagnosis in so many of these cases? To-day I can go into the schools of Nashville and pick out fifty children who have something wrong with their eyelids, suggesting trachoma. Some of you might say readily and rightly that it is not trachoma; others would say that it is trachoma. I can take these fifty children and line them up before two or three specialists I know—men of ability—who would say in every instance that it is trachoma. I can have two or three other specialists of equally good standing see them, and they will not pronounce over half the cases trachoma. My observation in the eight years' experience I have had convinces me I can do that. An example of this difference in diagnosis is seen in the school work. My colaborer will find twice as many cases of trachoma in a given number of children as I will.

Some of my professional brethren take the same position on trachoma that the old Baptists do in religion. They say: "If you get religion, you cannot lose it; if you lose it, you never had it." So with these physicians. They say that if you have trachoma, you cannot cure it; and if you cure it, it was not trachoma. I do not think that is the proper position to take. I do not find so many cases now, but I used to find scores of cases that every oculist in the state would have pronounced trachoma; and many of these cases, if not all of them, have been cured. I think acute trachoma can be cured. I know also that there are many cases of trachoma that are very obstinate—that hold on for a long time and do irreparable damage to the eyelids.

As to the treatment. I have used the expression treatment often, and I get wonderful results with it.

I express all granules of tissue I can, everting the lid well so as to get all parts of it, and then use cold compresses for one day, following it with an instillation of twenty-five-per-cent solution of argyrol and keeping that up for several days. The results are extremely satisfactory so far as my observation has been in these cases.

In work of this kind many of the cases we have get away from us and we do not see them any more. When we took our first statistics of our work in Nashville, we found two per cent of the children with trachoma. We did not examine the children in the colored schools. During the past year we have not found over three-quarters of one per cent. Most of the cases were extremely mild; and if we did find a severe case at all, it was an imported case. I believe three-fourths of the cases I have found during the past year have been cases of children who recently moved into the city.

DR. GEORGE H. PRICE, Nashville: I was glad to hear the paper of Dr. Richards and to hear this discussion. Why? When they began to investigate and treat trachoma in the schools of Nashville, there were two per cent of the children that were affected.

DR. ROBERTS: According to what we did.

DR. PRICE: I have seen a large number of cases that have been under the observation of Dr. Roberts and Dr. Moore, who examined them.

As to the question of diagnosis, no one can look at an eyelid and say immediately that it is trachoma or it is not; but if there is evidence sufficient in the character of inflammation that you have, on the mucous membrane of an eyelid, to make you feel and believe it is trachoma, you are justified in pronouncing it such and treating it.

A short time after Dr. Roberts and Dr. Moore began to work in the city schools of Nashville they reduced the number of trachomatous patients in that body of students to two per cent, and that amounted to many, many patients.

DR. ROBERTS: Twelve thousand.

DR. PRICE: Two per cent of that number—240 patients with trachoma was reduced by treatment down to about 60 patients, or one-half of one per cent. If you had not diagnosed and treated these cases as trachoma, how can you account for such results? When you treat trachoma, treat it. I have observed one patient from a single school in whom the diagnosis of trachoma was doubtful, but in which school trachoma was practically eliminated a year previous; and with that one patient inside of a few months they got more patients in that school with trachoma. Therefore you get trachoma and do not miss it on diagnosis.

Any disease of germ origin can be aborted, and you can rest assured that all such germs are organic in origin, and things or agents that will coagulate albuminous structures will kill the germ. When you can get to them with proper agents, you can destroy them and relieve the trachoma. You cannot wait for the development of the trachomatous masses and then treat the case without scars. If you put a tuberculous patient in the open sun and give him nothing but sunlight and proper food, he will get well of the tuberculosis, but he does not get

well without scarring. You cannot put another head in a large hip joint or in an elbow joint that will look like it was originally. You cannot do that. You cannot prevent some deformity from taking place in the eyelid, because you do not see the case early enough. Those cases which necessarily require such active agents as the stick of sulphate of copper have passed the early history of trachoma and have advanced to the chronic form. I have seen cases relieved by the treatment which we could outline if we had time; but the facts Dr. Roberts called our attention to demonstrate conclusively that you can get rid of trachoma if you treat it. And Dr. Ellett said a great many of these so-called "inspectors" think we are getting a great many more cases of trachoma than we ought to have. That may be true, but they are erring on the right side. It is far better to make an error and treat a case for trachoma and get rid of that condition than to let it go along, because one case will lead to more. In the orphan asylum we will have numbers of children infected. We want to get rid of the disease. I do not believe you will relieve these scars that they get. If you relieve the condition, you will have scar tissue, and you may have to resort to some operative procedure to get rid of it.

DR. W. W. POTTER, Knoxville: In those cases at the orphan asylums, we had the advantage of treating them early, so that we were relieved of the necessity of resorting to surgical measures. We have a school here—the Knox County Industrial School—and several years ago we had one or two cases of what was diagnosed as trachoma. There was no special treatment instituted at that time, and before very long nearly every child in the school had trachoma. It was thought that some of the children did not have the disease, but follicular conjunctivitis and what not. Almost every man who saw these cases said they were cases of trachoma, and they were treated as such; and, to my knowledge, there was not a single operation done on any child in that school. Of 220 children, there were 180 who had trachoma. Out of that number of cases treated, I do not believe there is a single active case of trachoma in that school to-day. We have been very careful to inspect the children, and I do not believe there is an active case there now. They have all been treated medicinally and not surgically.

DR. G. C. SAVAGE, Nashville: I hold in my hand a letter addressed to me by a confrere in charge of the Blind School in Nashville. This letter is of interest, and I will read it to you:—

"NASHVILLE, April 1, 1916.

"DEAR DR. SAVAGE: I find that I have some matters to come up, and will not be able to attend the Knoxville meeting. And as you have seen the cases under treatment, I will be glad to have you call the attention of the section to the treatment of trachoma with the bacillus *lactis* *Bulgaricus*. While I have not had a sufficient length of time to come to any definite conclusion as to the best line of treatment, I feel that the results are so far such that I should call the attention of the profession to this matter in the interest of humanity. My

course of treatment is this: I have the tablets powdered, the lids everted, the powder dusted on them twice a day, night and morning, and at noon I have one drop of a ten per cent of argyrol instilled into the eye. Out of the fourteen cases under treatment, three have developed iritis, and in these cases I am not able to say there was any greater tendency to the development of iritis from the use of the bacilli; but in children I think probably it is better to use atropin from the first in all cases. In old people, of course, the atropin should be used with caution and only when indicated. In some of the cases under treatment the improvement is such that I have left off the bacilli, while in others I am only using the bacilli once a day. In these cases I am now using dionin once every other day to clear up the remaining cloudiness of the cornea. Through you I desire to extend an invitation to any of the gentlemen who may be passing through Nashville to stop over and examine these cases for themselves. I am sure I need not urge any man who ever had any dealings with trachoma to do this. The importance of any line of treatment promising so much as stated above is self-evident. I am not giving you any definite outline of treatment, but wish to call your attention to this treatment and bespeak your coöperation, as I feel sure that the treatment promises more than anything we have ever had. Any detail that you may wish to add will be highly appreciated. I wish to thank you for bringing this to the attention of the section in my absence.

[Signed] JAMES P. CRAWFORD."

It has been my privilege to look over his cases with him in the treatment which he is now following in that institution; and if the results in these cases are permanent, a revolution in the treatment of old trachoma is on. All of us will welcome it.

I did not see all of these children. I do not know that I saw any of them when they were in their worst condition, but from what I can see now I can imagine what their conditions were a little while ago. I have not only Dr. Crawford's statement as to the severity of these cases, but I have the statement of the nurse also, who has been a very close observer and who has carried out the treatment herself.

There is one very peculiar thing that attends the treatment of these old cases of trachoma by means of the bacillus *lactis* *Bulgaricus*, and that is, there is danger of developing iritis. I do not know why it should be, but in some of these cases a distinct iritis developed as a result of the treatment by this bacillus. Of course, knowing that beforehand, we will guard against any iritis in any case we are treating. We ought to use atropin, especially in the young, as an agent to forestall the development of iritis. His cases of iritis have yielded readily to treatment by atropin.

The results in these fourteen cases—I did not see but thirteen of them—are simply beyond what could have been hoped for from any other line of treatment. As Dr. Crawford said in his letter, the treatment consists in powdering one of the tablets, grinding it in a mortar with pestle until it is an impalpable powder, and then this powder is dusted on the everted lids and on the eyeball and inside the lower lid as well, then

turning the lids back into normal position. I saw the treatment applied. The little fellows suffered for just a little while. I am sure I am safe in saying that five minutes from the time of dusting their eyes were open and they were no longer suffering from the use of the agent. If the bacillus lactis Bulgaricus will do what I have seen done, then we have given to us an agent that will do what we have been looking for, and we can do away with that ugly surgery you have been talking about. We can also do away with the stick of copper sulphate and the infusion of jequirity. I think we may have, in the future, better reports to make concerning the treatment of these cases of trachoma, and particularly the old cases.

DR. CHARLES HUFF DAVIS, Knoxville: Dr. Potter has almost made my speech for me, but I was going to speak about the roughened granulomatous appearance of the lids. My routine is to look at the fornix, upper and lower, the first thing, when I suspect trachoma, because it is there that it makes its first appearance.

I am surprised that no one has referred to the question of refraction. I do a refraction first, prescribe a suitable collyrium, and have the patient stay aside for three or four days, and see if the lid condition is not improved. A great many conditions are shown in the lids that simulate trachoma that are really the result of eyestrain.

At the Knox County Industrial School, when I was called down there about seven years ago, they had four cases, one of which was a teacher from Nashville. About five years ago I was called down there, and they had thirty-five cases; two years ago, one hundred and eighty cases. Dr. Price is correct in saying that when we make a mistake at all in these cases we should err on the correct side. Anything that is suspicious of diphtheria, we think of the disease and take corresponding care of it, and the same is true when we have a suspicion of any infectious disease; and why not take care of a suspected case of trachoma? The government health service inspected this district and the Knox County Industrial School, and raised particular Cain about it, and made a positive diagnosis of trachoma. It is not always easy of diagnosis, however. I happened to have had under my care a young Russian Jew, who passed by one of these examinations. It was a genuine case of trachoma. He had been in America over two years; and inasmuch as no very great damage had been done by the disease, he was one of those cases illustrating how easy it is to make a mistake in diagnosis. Characteristic of his race, he was not willing to pay his bill; but when I threatened to deport him, he paid immediately.

DR. GEORGE H. PRICE, Nashville: Why is it these patients have iritis from the use of this bacillus? There are some forms of organisms, after the eye becomes infected, that set up iritis in a few hours. Dr. Litterer was infected in the evening several years ago with an anaerobic bacillus, and he had a very bad case of iritis by the next morning. The Bulgarian bacillus may be exceedingly penetrative, and that is the thing that does

the good, but may also do harm in exciting the iris, in these cases. It is the penetration of the Bulgarian bacillus that attacks whatever bacillus or organism or whatever else is the cause of trachoma and overcomes it. That is the idea that I had, and I think it is the reason we get this iritis.

DR. EDWARD L. ROBERTS, Nashville: I want to say one other word before the discussion is closed. Perhaps what I did say before may have left a wrong impression. I spoke only of the surgical treatment. When we were finding the largest number of cases of trachoma in the Nashville schools, I am perfectly safe in saying that I did not recommend surgical treatment in more than one case out of ten.

One other point has been brought out by Dr. Davis to which I desire to refer. I make it a routine practice to refract, not completely, but at least test the vision and the refractive condition of every eye that has trachoma; and I have found in many of these cases they have refractive errors, the correction of which will help toward the relief of the irritation in the conjunctiva.

DR. A. F. RICHARDS, Sparta (closing): The object of my paper has been accomplished. I wanted to hear this subject freely discussed, and it has been very ably done. A suggestion only was necessary.

There are just one or two things I want to refer to. The question of diagnosis in trachoma is like diagnosis in typhoid fever, in pneumonia, and in many other diseases we have to deal with. I suppose there is not a man here who is not liable to make a mistake in regard to the diagnosis of trachoma. It is so with me; and in diagnosing trachoma, I find that I have to diagnose it like I do many other diseases. I may have to treat it frequently for a long time before I am fully satisfied in my mind as to the diagnosis. I suppose that would be so with every man who makes a confession; and hence many mistakes are made in the diagnosis of trachoma.

With reference to a cure, I think Dr. Ellett is eminently correct in saying it is curable. I do not care how many scars are left. I do not care if the lid is turned outside in, trachoma can be cured. These things have been thoroughly established and brought out by the discussion.

One other point. I want to refer to Dr. Roberts' remarks and indorse the idea of our being able to diagnose trachoma and of the disease being eradicated by treatment.

Another thing in connection with what he said was this: That surgery was seldom needed in the cases that were diagnosed by him. Why? Because there are cases in which he hunts out the disease early; and, therefore, surgery is not indicated. The cases I see are old cases; as a rule, they are thoroughly established; and I am not so likely to make a mistake in my diagnosis and treatment with surgery. I find after they are old and have been going on until there are many injuries left that will never be eradicated, still the active condition is cured. I have cases on hand that have been cured now twenty years. They have not had a return. While trachoma is evidently a recurrent disease, I think the recurrence is due mainly to our

failure to bring about a cure. When these cases are cured, the disease does not return any more than it would in a man who has never had it.

TUBERCULAR PERITONITIS.

BY RICHARD A. BARR, M.D.,
Nashville.

ETIOLOGY.

Method of Infection.—Tuberculosis of the peritoneum, like other infections of that membrane, is seldom primary (.9%, Borschke), unless it is so considered when part of a general miliary tuberculosis. The primary focus is much more frequently without the abdomen than is the case with nontubercular peritonitis; but while hematogenous infection is found oftener than in the latter, in the great majority of instances with pulmonary or other extra-abdominal primary focus there is secondary involvement of some of the abdominal or pelvic viscera before the peritoneum itself is attacked. It is possible for the tubercle bacillus to pass through the sound membrane of the bowel, or rather through the intact epithelium; but in this case the lymph nodes will be first involved and the peritoneum sequentially. Extension from the Fallopian tubes and lymph nodes is the commonest method of infection, with the appendix, cæcum, and lower ileum (ileo-cæcal region of gut) furnishing the next largest quota. The intraperitoneal rupture of a caseating visceral focus occasionally occurs, and results in prompt dissemination of tubercles over the peritoneum. Infection from the pleuræ may occur directly by ulceration or through the lymphatics. The lymphatics play a part in the etiology of tubercular peritonitis essentially different and more important than in nontubercular infections, and involvement of the membrane from its attached surface through this medium is comparatively frequent. The peritoneum seems almost as readily infected by a tubercular process from one surface as the other, and this makes the condition many times more common than it otherwise would be. The etiological fact of most importance from the surgical point of view is that many cases of tubercular peritonitis have their origin by extension from a primary focus in the Fallopian tubes or from a primary focus in the ileocæcal region of the gut.

Age.—Tubercular peritonitis may occur at any age, though it is more common from twenty to forty. In the first year of life it only occurs as part of a general miliary process, according to Rotch.

Sex.—Among adults the condition is found more frequently among males at postmortem and among women (4 to 1, Mayo) at operation.

It is safe to assume that any condition lowering general vitality predisposes to tubercular infection, but tubercular peritonitis will not infrequently be found in patients with every evidence of robust health.

Cirrhosis of the liver is an associated condition (2 in 13 fatal cases, Nothnagel; 5 in 24 fatal cases, Vierodt) without assured position as cause or effect.

PATHOLOGY.

The pathological varieties of tubercular peritonitis are simply different stages of the process. There are three easily distinguishable stages—miliary (with effusion dry), caseous, fibrous. All three of these may be found in different parts of the peritoneum at the same time, and mixed infection, resulting in a suppurative process, may also be present. The miliary type is the only one likely to be found alone.

Miliary Tubercular Peritonitis.—The pathology of the miliary or initial stage is represented by grayish or yellow tubercles scattered over the peritoneum, especially along the line of the blood vessels or lymphatics. The tubercle may be placed on a hyperæmic spot or there may be no naked eye changes around its base. Peritubercular exudation, with consequent thickening and friability of the membrane, is the rule. Serous exudate into the cavity, varying in color from straw to red, is usually present in greater or less quantity; but widely disseminated tubercles are found at times without serous or other effusion, except possibly around focus. There is no very satisfactory explanation advanced for this variation, nor is it fully agreed as to whether there is overproduction of fluid or crippled absorption in cases with pronounced exudate. Plastic exudate is apt to be found with this as with the other types; and when serous exudate is scanty or absent, this results in adhesions, and at times the cavity is practically obliterated. These adhesions at first are soft and easily separated; but as time advances, they become

stronger, and may finally be organized into dense connective tissue. Serous exudate may be sacculated by adhesions. Enlarged lymph nodes are commonly present.

Caseous Tubercular Peritonitis.—At this stage the tubercles have undergone caseation, and have a tendency to break down and lead to the formation of ulcers on the peritoneal surface of the viscera. Extensive plastic exudate is present, with resulting adhesions, shutting off pockets containing caseous material, serum, and pus, this last being the result of secondary infection. As a result of the peritoneal ulcers, fistulae may form, which may connect the cavities of the hollow viscera with the peritoneal cavity or which may be intervisceral or external. As already stated, areas of miliary tuberculosis may be present, and fibrous areas are quite the rule.

Fibrous Tubercular Peritonitis.—Adhesions are common at any stage of the tubercular process, and in some cases from the very outset the fibrinoplastic material is in excess and hangs in festoons from the viscera. It is only after this becomes organized and tough that we find the typical fibrous peritonitis, the tubercles having disappeared to a great extent over the corresponding area or being covered up by the connective tissue formation. This connective tissue has a tendency to contract, and the various viscera may be displaced or constricted by it. The mesentery, if involved, is shortened and the omentum rolled up into a hard mass. The pelvic viscera may be so covered with fibrous exudate that it is impossible to feel or see any line of cleavage between them. The coils of small intestines are at times drawn back against the posterior parietes by shortening of the mesentery, and so agglutinated and covered up with fibrous material that their outlines can barely be discerned. Coalesced and caseating tubercles covered with fibrous tissue may cause large nodules or even pendulous tumors. The disappearance of tubercles, with progress of the fibrous process, shows it to be in some sense at least a stage of spontaneous cure, though it falls short of being complete, and, where curative, results in serious crippling. The association of the different stages of the tubercular process in different areas of the peritoneum must again be emphasized.

SYMPTOMS.

As has already been stated, tubercular peritonitis is an essentially chronic process, and the condition may be latent and not manifest itself by either symptoms or physical signs. When evidences of a tubercular process are present, it is difficult to determine just to what extent the involvement of the peritoneum is responsible for them, since there are frequently other lesions. We have in some instances the usual general symptoms of tuberculosis, with special symptoms from the abdomen, and possibly also from other areas. Without attempting to select too closely the symptoms caused by tuberculosis of the peritoneum, we will give those most likely to be associated with it.

Onset.—The mode of onset may be sudden, with acute symptoms, or the condition may be chronic from the outset. The acute onset of tubercular peritonitis has no radical difference from acute nontubercular peritonitis. We have the same abdominal pain, tenderness, and rigidity. We have vomiting, constipation, and tympanites; and there is fever (possibly 103 or 104 F.), rapid pulse, accelerated respiration, and also leucocytosis. The frequency of its spread from ileocecal tuberculosis, or from the Fallopian tubes in the female, increases the resemblance. There is really nothing about the process to distinguish it from an ordinary pus infection, though the antecedent history or the patient's general appearance may be strongly suggestive. With subsidence of acute symptoms, the condition becomes chronic, as a rule, though the case may clear up as completely as an ordinary infection.

The gradual onset suggests an anomalous typhoid fever. The patient begins to lose appetite, flesh, and strength. There is an afternoon rise of fever, with normal or subnormal morning record. The pulse is a little fast, and quickens on the slightest exertion; some varying abdominal distention, with slight general tenderness, and possibly localized tenderness more pronounced. As the condition advances, these symptoms become more clearly marked. The digestive symptoms increase in severity, and there are frequent attacks of colic, with formation of large quantities of gas in the bowel. The temperature runs higher in the afternoon, abdominal tenderness becomes more marked, and voluntary rigidity

increases with it. Night sweats may occur. In women there is often present pain in the back and lower abdomen, as well as increased frequency and urgency of micturition, most likely due to salpingitis. Alternating diarrhea and constipation may be present, due to ulceration of the bowel. With caseation and mixed infection we get a septic temperature, with possible chills and sweats. Acute or chronic mechanical obstruction of the bowel may occur from organization of plastic exudate, with resulting matting of intestines, and possibly strangulation.

Spontaneous recovery may take place or the course of the disease may be progressively downward. Acute exacerbations, with symptoms already described, may occur, and their frequent return suggests caseation and mixed infection.

Physical Signs.—We may find the physical signs of *gas* in unusual amount, with *free fluid*, *encysted fluid*, *solid tumor*, one or all.

Inspection.—On inspection we can usually detect some abdominal distention. This may be slight or great; and though usually symmetrical, is not always so. The umbilicus is apt to be pouting, and a serous, purulent, or fecal discharge from it may be present, such occurrences being for some unexplained reason comparatively frequent in tubercular peritonitis. There is usually, but *not always*, some loss of flesh, possibly emaciation. The lower limbs may be oedematous. The skin is at times grayish or livid in color, and may even be pigmented from adrenal disturbances, or from associated hepatic cirrhosis it may be jaundiced.

Palpation.—As already mentioned under "Symptoms," more or less general tenderness and rigidity are found on palpation, with possible localized increase. Encysted fluid, enlarged lymph nodes, rolled-up omentum, a thickened cæcum, or agglutinated coils of the intestine inclosing caseous and other material may form a palpable mass. Cross-palpation may show the fluctuation of free or encysted fluid. Vaginal or rectal examination may detect indurated masses in the pelvis or may elicit the elastic bulging of fluid. In many cases there are no palpable evidences of disease.

Percussion.—An increase in the normal resonance of the abdomen is the most common finding on percussion. Many of the palpable masses that may be found will be more or less resonant on percussion. Areas of resonance and dullness,

shifting with change of position, are expected to be found, with free fluid; but occasionally the fluid is so large in amount and the bowel so confined by shortening of the mesentery that change of position does not influence the percussion note. Overlaying bowel may make the dullness of encysted fluid hard to determine; and when this dullness is distinct, it is characteristic for the line of demarkation between it and the resonance of the bowel to be very irregular. It is very necessary to try both superficial and deep percussion to bring out the signs satisfactorily.

DIAGNOSIS.

An important point in the diagnosis of this condition is to always be on the lookout for it. Keep its possible occurrence always in mind.

In tubercular peritonitis, with acute onset, the diagnosis must be made, if at all, on the general appearance of the patient and a history or symptoms and signs pointing to pulmonary, bowel, or genital tuberculosis. A family history of tuberculosis is suggestive and of value where a personal history is lacking. A tuberculin test is helpful, but not final, and cannot always be waited for. A mistake in diagnosis when it leads to operation is not necessarily harmful, though it is desirable to wait for the passing of the acute stage before surgery is done. With the subsidence of acute symptoms, the persistence of general tenderness and of gas formation is very suspicious.

In gradually established tubercular peritonitis, typhoid fever may be excluded by blood cultures or the Widal test. The blood count may also be of positive value.

A persistent difference in morning and afternoon temperature, though the highest registered may not be above normal, and an accelerated pulse are suggestive. When persistent gas formation and digestive symptoms, with some general tenderness and rigidity, are added to this, the condition is clearer still. Palpable lymph nodes, evidence of free or encysted fluid, palpable omentum, etc., narrow the diagnosis considerably. A demonstrated tubercular lesion anywhere in the body should always be given due weight.

Ascites due to tubercular peritonitis is distinguished, according to Cabot, by a relatively slow accumulation of fluid and at least a slight general tenderness and rigidity.

The tuberculin test, while not positive, is valuable.

The leucocyte count is of little or no value.

DIFFERENTIAL POINTS IN ASCITES (Cabot).

Cirrhosis of Liver (may be associated with tubercular peritonitis):

Alcoholic history.

Marked digestive disturbance.

Melæna.

Hematemesis.

Negative tuberculin test.

Visceral Syphilis:

Positive Wassermann.

Negative tuberculin test.

Result of antisyphilitic treatment.

Kidney Disease:

Urinary findings.

Negative tuberculin test.

Ovarian Cyst:

Symmetrical location and sugar-loaf shape.

Distinct and regular outline of border between dullness and resonance. Bowel always readily located and not concealed, as in large ascitic collections, with shortening of mesentery.

Negative tuberculin test.

History of development from below.

Cancer of Peritoneum:

Rapid progress.

Age of patient.

Profound cachexia.

Negative tuberculin test.

Negative Wassermann.

Chronic Nontubercular peritonitis:

Tuberculin test alone or with injection of fluid into animals after operation.

There are cases of chronic nontubercular peritonitis and of peritoneal cancer that can only be differentiated from tubercular peritonitis at operation, and even then microscopic investigation of removed tissue and animal inoculation may be required.

PROGNOSIS.

Tubercular peritonitis is more favorable in children than in adults, though infants are an exception, since in them it is usually a part of a general miliary process.

The prognosis is, of course, influenced by lesions other than that of the peritoneum; but as high as 80 per cent of recoveries has been claimed by both surgical and medical treatment. A conservative estimate of permanent cures by surgical treatment would place it at about 65 per cent, with the results of medical treatment considerably lower.

TREATMENT.

A patient with peritoneal tuberculosis should have every advantage that climate, hygiene, careful feeding, and intelligent medical treatment can afford. In addition to this, ascitic cases will, without exception, be benefited by operation intelligently done. Just in what way operation is of advantage is not known, except when the primary focus can be removed. This has long been known in tubercular processes to be followed by spontaneous healing of secondary foci, and abdominal tuberculosis is no exception. This can oftenest be done with genital (female) or ileo-cæcal primary focus. When removal of the primary focus cannot be accomplished, the mere opening of the abdomen, with evacuation of such fluid as may be present and admission of light and air, gets wonderful results at times. There are various theories advanced to explain the effects of operation. The most reasonable explanation is that hyperæmia results and the old stagnant lymph is replaced by a new and potent lymph transudation (Wright and Douglas).

To get this good result, it is necessary to open up the peritoneum. Where there are extensive adhesions, this is difficult and dangerous of accomplishment. Fecal fistula will sometimes follow very slight handling of adherent gut, and this is always a most serious, though not necessarily incurable, complication. Cases of miliary tubercular peritonitis without adhesions respond well to surgery, as do adhesive cases when the viscera are not too densely attached to be safely separated. The ascitic cases, however, can be handled with the least risk and get the best results. It is probably not desirable to do more than mop out the fluid. The use of iodoform or bismuth adds little or nothing to the benefit gotten. Drainage in any form is undesirable, and should always be avoided whenever possible. The use of X-ray or Finsen light in the peritoneum, with abdomen open, is not practicable.

Pulmonary or other extra-abdominal lesions may contraindicate surgery of any kind.

It is undesirable to operate in the stage of acute symptoms or to operate early in any case. Shattuck has placed four to six weeks as a sufficiently short time to use medical measures, and he does not believe in operating at all so long as the patient continues to improve. Complications like intestinal obstruction may force operation at any time. While a selection of cases for operation gets the best temporary and permanent results, we must remember that "there is no form in which we can say that laparotomy is absolutely useless" (Watson Cheyne). When medical measures have failed, a carefully done section may obtain an entirely unexpected benefit.

As pointed out by Murphy, removal of the primary focus influences very decidedly the completeness and permanency of cure, and should always be done when possible. It is at times difficult to determine whether or not removal of the primary focus is of sufficient value to justify the traumatism that will be necessitated, and in case of doubt it is best to lean to the side of non-interference.

The postoperative treatment should be carried out with the greatest care in detail. While some patients make complete recoveries without any further care than that ordinarily given to surgical cases, there can be no doubt about the advantage of giving operated cases of peritoneal tuberculosis the same medical attention that they would have received without operation.

TO RECAPITULATE.

Avoid operation during acute symptoms.

Try medical measures first in any case. If improvement does not take place in six weeks, operation is justifiable, and is especially advantageous in ascitic cases.

Avoid traumatism in operating.

Remove primary focus when possible.

Do not drain if it can be avoided.

Success in operation is dependent on opening the cavity of peritoneum. Unexposed areas get little benefit.

The United States Public Health Service will send a booklet on flies and disease, gratis, to all applicants.

HERNIA.*

BY E. H. BAIRD, M.D.,
Dyersburg.

It is rather hard to make the subject of hernia one that may be of interest to an assemblage of doctors—not that we don't meet up with this condition, but rather due to the reverse. From time immemorial this condition has confronted us, and, I might say, because of its very frequency we do not give it the full consideration that it justifies. I do not hope to advance anything new upon this subject for your consideration, but by discussion of the subject to succeed in reviving to some extent, as the preacher might say, our common knowledge and interest along this line. The condition of hernia is too often at the present time delegated to the treatment and care of the corner druggist or the mail-order advertiser.

Since the use of local anæsthesia has been carried into all fields of major work, we have a means of correcting these cases that should be put before each individual ruptured person for consideration, giving as it does practically no death rate and making of an inefficient man one that is efficient. The question of hernia, while a common one, is one that should be taken into consideration when found in such great numbers as at the present time. A goodly percentage of our people are affected in some form or other, not only from the standpoint of life and health, but as to the utility of those affected to themselves, their families and friends, and indirectly to the community. This is my reason for choosing hernia for discussion.

The term "hernia" came from the Greek word meaning an "offshoot," and may be applied to a protrusion or projection from the surrounding surface. When used alone, the term has come to be synonymous with "rupture," and is applied to a protrusion of one or more of the abdominal viscera through a normal or abnormal opening. The great increase of knowledge along this line is a result of a large number of operations for the radical cure of hernia that have been performed during the past two or three decades. In a large majority of the cases it has been proven that hernia is a disease rather than an

*Read at the meeting of the West Tennessee Medical and Surgical Association, Jackson, May, 1916.

accident—in other words, is due to some congenital defect in the peritoneal wall.

Anatomic Varieties.—Among the most common varieties in frequency are inguinal, umbilical, femoral, and ventral. We occasionally find the rare forms of obturator, pelvic, lumbar, diaphragmatic, and retroperitoneal. Among the clinical varieties of hernia we recognize the reducible, irreducible, inflamed, and strangulated.

In the reducible form, contents of the hernial sac are returned into the abdominal cavity spontaneously or upon slight manipulation. In the early stage of development, practically all herniæ are reducible, and this fact is a strong reason for early operation and treatment. In the irreducible form, many difficulties are encountered. This condition is most apt to be mistaken in an inguinal hernia for hydrocele, and vice versa, especially in children. In irreducible umbilical herniæ, especially in stout people, we have associated a series of digestive disturbances—colicky pains, flatulence, irregularity of the bowels, and other symptoms—that are classed by the patient under the general head of “stomach trouble.” Also in other forms of hernia of long standing the patients complain of gradually increasing discomfort and intestinal symptoms that make their life miserable. Irreducible hernia, long continued, is very often followed by an inflamed condition of the sac, which soon becomes matted and adherent to the surrounding tissues. Sometimes an infection occurs in this class of cases, followed by suppuration, and often with a slough of the parts.

Under the type of cases called “strangulated hernia” we sometimes “meet our Waterloo,” this being one of the most dangerous conditions met in surgery. Here the doctor or surgeon is rewarded for the early relief of this condition by the absolute knowledge that the patient is indebted to him for his life, and here also can be seen as by magic the relief of dangerous symptoms and a condition of shock relieved that would in a few hours be beyond treatment. Here also comes our high mortality rate, running as high as fifty per cent in all cases of strangulated umbilical hernia.

Inguinal hernia, direct or indirect, is the type most often met with, and it is surprising how many persons discommode themselves by the daily adjustment of some variety of truss. The diagnosis in these cases is generally made before

reaching the doctor—most often by the corner druggist who has a truss to sell. In some cases the diagnosis is not so easy, as inguinal and femoral adenitis may closely resemble hernia. In lipoma we have the more superficial and more movable tumor, and the history of nonreducibility will differentiate this condition, sometimes found near hernial orifices.

Saphenous varix may closely resemble femoral hernia; but if, after reducing the tumor, the fingers are placed in the femoral opening and the tumor slowly disappears, you have a saphenous varix. We nearly always find an enlarged condition of the veins in the lower extremity in this condition. This, taken along with the classical symptoms of hernia—that is, the presence of the tumor at some natural abdominal outlet, or an unnatural, either, as following some pus case—taken in connection with the fact that the tumor is reducible or has been in the past, impulse to the finger upon coughing, etc., usually leads to the correct diagnosis. We often have an immediate or exciting cause—such as lifting, straining, etc.—but the inherent weakness was there previously in the main varieties, and the increased intra-abdominal pressure serves to bring the peritoneum out. Obesity and pregnancy and constitutional diseases that tend to atrophy the abdominal muscles are predisposing causes, especially in the umbilical type.

The mechanical treatment is generally inadequate, and only delays, in a great number of cases, the day of reckoning. There are some forms of trusses and abdominal belts that in certain cases retain the rupture and in certain other cases set up a mechanical irritation that may sometimes close the opening in an effective manner, but they are bothersome and lower the efficiency of the parties using them. I also mention only to condemn the combination injection of tincture of iodine, white-oak bark, etc., or the more dangerous procedure of an injection of carbolic acid in vogue in many of the “advertising quack” offices of our larger cities.

The introduction of subcutaneous surgery by Stromeyer in 1835 marks an important era in the history of operative treatment in hernia. The first operation for the radical cure after the introduction of antiseptics was that of Richard Steele, of London, in 1874, followed by Czerneys in 1877. While immediate results in some of these methods were good, particularly in the

hands of their originators, the total results were far from satisfactory.

The discoveries of Lister and Pasteur materially raised the percentage of cures in these cases, and many different methods were devised for the radical cure of hernia; but at the time Holstead and Bassini reported their methods the faith in operative procedures was beginning to wane. The unquestionable superiority of Bassini's operation over previous procedures, recognizing as it did the underlying weakness of the peritoneal wall, raised the operation to where at the present time the percentage of recurrences following operation certainly justifies the small risk attached to the procedure. Only those methods should be employed that have stood the test of time. With equally good results, that method should be selected which is the simplest as regards technic and safest as regards risk of life.

In the inguinal form, which is the most prevalent type at present, the Bassini method, with or without the transplantation of the cord, is the method of favor. In the cases of children the transplantation of the cord is not so essential. In adults better results are obtained by this procedure, especially so in the direct form of inguinal hernia.

Suture material had a great deal to do with the recurrences in the early operative procedures. The early absorption of simple catgut weakened the wound, but with the standard twenty and thirty-day chronic catgut of present-day manufacture this trouble is obviated.

The question of anæsthesia in hernia operations is important. Some surgeons advocate at the present time local anæsthesia, even in non-strangulated cases. There is no question but that local anæsthesia should be used in all cases where there are any contraindications to the general anæsthetics, and used in all hernial operations, subject, of course, to individual exceptions. In children it is necessary in the majority of cases to combine the local with the general anæsthetic. This is our method of choice, and we are at present using at the Hosmer Hospital a $\frac{1}{2}$ of 1 per cent to 2 per cent novocain solution to which has been added some adrenalin in our local anæsthesia cases. Since the mighty war has shut off our supply of novocain, we are using the quinine and urea-hydrochloride locally, and more of the morphine and hyoscine preliminary injections. In fact, we have done a number of

cases where the entire anæsthesia was practically obtained by the use of the morphine and hyoscine. We give one full dose, $\frac{1}{4}$ gr. morphine and 1-100 gr. hyoscine, to start with, and then slowly and cautiously add a fraction of this dose at an injection until we get the desired effect. 1-60 gr. strychnine is added to the second injection. In some particular cases the second or third fractional dose may be of morphine alone, but this combination is used unless the hyoscine produces too wild a condition in the patient, which it will exceptionally do. The use of apomorphine in 1-20 gr. dose will (according to Monison) effect a relaxation of the patient and a continuance of the anæsthesia. If this drug is used during this method of anæsthesia, the patient must be closely watched for symptoms of nausea or vomiting; but these quickly subside and operation may proceed. Under this method the mortality rate should be practically nil.

In the accidents of hernia the mortality rate is entirely different. In the obstructive type the symptoms are milder than in strangulation; but if after mild treatment the obstruction is not relieved, it should be treated as a strangulation and immediate operation advised.

The irreducible type of hernia is liable to pass into the inflamed type, causing a great deal of local trouble and sometimes attacks of local peritonitis.

Gangrene inevitably follows the nonrelief of the obstruction to the viscus in the strangulated form. As a result of the interference of the circulation we first have a venous stasis, followed by a pouring out of serous fluid, at times more abundant than at others. The loop of the bowel at first is of a much brighter red than normal, owing to its congestion; it then becomes purplish; and, later, as gangrene develops, it becomes grayish in character. The time at which the destruction of the bowel occurs is necessarily variable, being governed by the tightness of the constriction. Consequently here, more than in any other case, we may take to the famous dictum of Stromeier: "If called to a case of strangulated hernia in the daytime, the sun should not be allowed to set; if called in the night, the sun should not be allowed to rise, before the strangulation has been relieved."

These cases of strangulation are well illustrated by a case recently referred to me by Dr. I. N. Rawles.

History of Case.—Female. Residence, five miles in the country from Dyersburg. Age, fifty-five. Fleishy. Mother of ten children. For the past six years has had an umbilical hernia about the size of a grapefruit. This followed closely the birth of her last child. The usual train of digestive disturbances occurred in this case during the six years. On January 17, Dr. I. N. Rawles called me, and we drove to the patient's house, arriving there about 4 P.M., when the following account was given:

On the previous day, about 8 P.M., the patient, in lifting a chair, felt something give in the tumor, followed by pain radiating from the umbilicus. This became so severe that Dr. Rawles was called during the morning. He reports that at that time there were no symptoms of shock or strangulation. He administered an opiate and left instructions to report to him. The next day they reported her no better, and I accompanied him to the case. Physical examination showed umbilical tumor about the size of a large grapefruit. Red, inflamed, and œdematous, with severe pain, anxious expression of the face, with a temperature of 100 and pulse 128, with history of vomiting frequently. The diagnosis of strangulated umbilical hernia was made, and she was immediately ordered sent to the hospital, where she arrived about 8 P.M., thirty-six hours after the strangulation. She was taken directly to the operating room, and the temperature at this time registered 100½ and pulse 150. Owing to the high mortality rate of fifty per cent in this class of cases, I decided to use local anæsthesia. I injected about one ounce of a 1-per-cent novocain solution, to which had been added one dram of adrenalin solution. This was placed in the skin surrounding the tumor and in the fascia of the rectus. After opening the skin, I found the sac thickened and enlarged, with a thick layer of fat around it, and containing a bunch of omentum attached to the sac. On opening through the sac and omentum, I found about eight inches of dark, granular-looking gut. After relieving the constriction, hot saline towels were placed on the intestines; and as it seemed to regain a little of its life, I replaced it in the abdomen, and removed the sac, sewing the edges together. I then overlapped the fascia of the rectus muscle, removed the redundant portion of the skin, and closed the wound. The patient was removed from the operating room, and the Murphy drip begun.

There was immediate cessation of the pain and vomiting, the shock symptoms subsided, and at 6 A.M., ten hours after operation, the temperature and pulse registered 99½ and 80, respectively.

The afternoon of the first postoperative day still showed the absorption of the toxins, temperature registering 101 and pulse 110. The second postoperative day showed some slight absorption of toxins, which soon subsided, and the patient became practically normal on the fourth day. The postoperative subsidence of the chronic gastric symptoms in this case shows the advisability of operation from a general health standpoint.

A more recent case was an inguinal strangulation. The patient was examined in Newbern, occurring in Dr. Brewer's practice. History of strangulation for four hours. No reduction being effected by careful taxis, the man drove two miles in the country to his home in his buggy, then reentered the buggy and drove ten miles to the hospital, where we did an immediate operation under local anæsthesia and morphine and hyoscine injections. The strangulation was relieved before serious symptoms intervened, and the man made an uneventful recovery.

Recently an inguinal strangulation of forty-eight hours' standing, reduced and operated under ether anæsthesia, did not turn out so favorably, the patient, a young man, dying at the end of forty-eight hours from subsequent toxemia. I don't think a more favorable result could have been obtained, however, under local anæsthesia. It was just a question of operated too late.

I do think that we should pay more attention to this great array of people who are ruptured, and have them operated upon in time, rather than spend our time and their money in mechanical appliances which do not take away from them the ever-present chance of strangulation and which do not permit of as efficient service to themselves and family as the more radical procedure of operation.

Exercise in the garden is better than exercise in the gymnasium.

It is estimated that the average manure pile will breed 900,000 flies per ton.

THE LAW AGAINST "FEE SPLITTING."

House Bill No. 50, known as the "fee-splitting bill," was introduced by the members of the House from Shelby County, and was passed in both houses. As will be seen by reading the following copy of the original bill, the Tennessee law against the buying and selling of patients is very drastic. If there are those who are given to the practice of "fee splitting" in this state, we would suggest that such practice is now dangerous business. It never was right and now has the added condemnation of the law of the state.

HOUSE BILL NO. 50.

Rosenfield, Bell, Chandler, Croce, Davis, Hines, Holson,
Macon, of Shelby.

P. I. R., January 4, 1917.

An Act to prohibit the buying or selling of patients by physicians or surgeons, or other persons, and to define what shall constitute the buying or selling of patients, and to fix the punishment for violation of this Act.

Be it enacted by the General Assembly of the State of Tennessee:

I.

It shall be unlawful for any licensed physician or surgeon in the State of Tennessee to divide, or agree to divide, any fee or compensation of any sort whatsoever received or charged by him in the practice of medicine or surgery with any person whomsoever, without the knowledge and consent of the person, firm, or corporation paying such fee or compensation or against whom the same may be charged; and any person violating this section shall be deemed guilty of a misdemeanor, and, upon conviction therefor, shall be punished by a fine of not less than twenty-five dollars (\$25) nor more than five hundred dollars (\$500) for the first offense, and for the second or any subsequent offense shall be punished by a fine of not less than one thousand dollars (\$1,000), and may, in addition, be confined in the county jail for a term of not more than one year. Any person who shall violate the foregoing provisions of this section shall also forfeit and pay treble the value of such fee or compensation to the person, firm, or corporation paying the same or against whom the same may be charged or from whom it may have been demanded; and if the party entitled to sue therefor shall not sue therefor within two years after the fee or compensation aforesaid shall have been paid or demanded, then the State of Tennessee shall have the right to sue for and recover said treble amount, which shall, upon recovery, be paid one-half into the treasury of said state and one-half to the officer prosecuting such suit.

Be it further enacted:

II.

It is hereby made the duty of the Attorney-General of the State of Tennessee or of the prosecuting attorney of any city or county in which service or process may be had upon the person, firm, or corporation liable therefor, to institute all suits necessary for the recovery of said sums of money by the State of Tennessee.

Be it further enacted:

III.

That the license of any physician or surgeon who may be convicted of a violation of any of the foregoing provisions may, upon the first conviction, and shall upon any subsequent conviction, be adjudged to be canceled and annulled by the court before whom such conviction may be had, without further trial or hearing; and such physician or surgeon shall not hereafter again be admitted to practice medicine or surgery within this state.

Be it further enacted:

IV.

That this Act shall take effect from and after its passage, the public welfare requiring it.

The nutritive value of whole wheat as a permanent article of diet has long been known, and its use has been advocated by physicians for years. One objection of the past has been the unpalatableness of the usual forms, and especially has this been true in the feeding of children.

It is interesting to note the change in the attitude of the child since the popular invention of Prof. A. P. Anderson (Puffed Wheat) has been marketed. No longer does the junior member of our household refuse. Quite the contrary, he demands. The invention itself is no less interesting. Sealed in guns, the whole grains of wheat are revolved for an hour in 550 degrees of heat. Thus the moisture in each food cell is turned to superheated steam. When the guns are shot, these food cells—over a hundred million per kernel—explode. The whole wheat grain is transformed into thin, airy, flaky bubbles, eight times their normal size. By this remarkable process the Quaker Oats Company, of Chicago, has received the indorsement of physicians for their product.

Procrastination in sanitary reform is the thief of health.

Cholera is spread in the same manner as typhoid fever.

REPORT OF SECRETARY FOR YEAR—
APRIL, 1916-17.*To the House of Delegates:*

Your Secretary is greatly pleased to be able to report that the year ended December 31, 1916, established a new record in point of the number of members enrolled in the Tennessee State Medical Association. Including the ten or twelve honorary members reported, 1,621 physicians were recorded as belonging to the association—an increase over the preceding year of 169.

Gains were recorded in Blount, Campbell, Cumberland, Davidson, Dickson, Dyer, Franklin, Gibson, Giles, Greene, Grundy, Hamblen, Hamilton, Hardeman, Haywood, Henderson, Henry, Knox, Lake, Lauderdale, Lincoln, Madison, Marshall, Maury, Monroe, Montgomery, Obion, Polk, Rhea, Roane, Rutherford, Sevier, Shelby, Sullivan-Carter-Johnson, Tipton, and Williamson. In some of these counties the increase was quite small, while in others notable gains were made over 1915. Blount, Rhea, and Henry counties doubled their membership during the year just passed, while remarkably large gains were made in Campbell, Dyer, Maury, Obion, Shelby, and Sullivan-Carter-Johnson. In some instances, however, the increase in 1916 simply served to emphasize the fact that there had been stagnation in 1915.

Anderson, Bedford, Fayette, Jackson, Loudon, and White counties reported an equal number of members for 1915 and 1916. In practically all of these counties one or more members did not renew their affiliation in 1916, the number reported having been held constant by the enrollment of new members. It is deplorable that this condition of affairs should continue. If every member could be held in line from one year to the next and new members should be added to the membership as they become eligible, it would not be long until every eligible physician in Tennessee would be identified with the association.

Carroll, Chester, Crockett, Jefferson, Macon, Morgan, McMinn, McNairy, Overton, Putnam, Robertson, Smith, Warren, Washington, Weakley, and Wilson counties showed losses in membership for 1916, while Stewart and Unicoi did not report at all. In some of these counties the loss was very slight, and was accounted for by deaths or removals, while in others the losses were relatively heavy, and cannot by any means

be explained by your Secretary. The most serious loss was suffered in Crockett County, from which thirteen members were reported in 1915, while only one was reported in 1916. Even yet it occasionally happens that the State Secretary receives notification from some physician that he has paid his dues into the hands of the Secretary of his county society, when no report has been received informing the State Secretary that such is the case. It is a pleasure to report that Unicoi County, unreported for 1916, has returned to the fold for 1917 with an enlistment of six members.

Bradley, Coffee, Decatur, Hawkins, and Wayne Counties were unorganized in 1915, but reported a combined membership of forty-four members in 1916; while Scott County, from which no 1915 report was received, had nine members enrolled in 1916. Organized medicine in the state has been greatly strengthened by the addition of these counties to the list of component societies in the State Association, and the indications are that they are now on a permanent basis of organization, since all but one—Wayne—have reported for the present year.

It must be remembered that the lack of actual increase of membership in a county—or, for that matter, an actual loss of one or two names from the county roll—does not mean that the officers and members have been inactive or that a lagging interest in medical organization has been shown. There are several counties in which every eligible physician is affiliated.

There were sixty-six counties represented in the association in 1916, twenty-three of which were in East Tennessee, twenty-four in Middle Tennessee, and nineteen in West Tennessee. One society is made up of members from three counties—Sullivan, Carter, and Johnson. This organization has grown to be the fourth largest society in the state, and in its success other groups of counties should learn an obvious lesson.

Bradley, Coffee, Cocke, and Hardin Counties have been organized since the last annual meeting, the two last named having been received into the State Association this present year. These new units are most cordially welcomed, and it is to be hoped that they will receive benefits from the union which will enlist them permanently in the state and national societies, to which it is believed they will lend strength.

Stewart and Morgan Counties seem to be lost to the association.

It is to be regretted that no accurate report can be made as to the removals of members to other states, nor as to deaths of members who have died during the year. We would ask that delegates and County Secretaries here present hand to the Secretary names of members who have died, in order that proper tribute may be paid to their memories. *

Dr. L. S. Trusler, representing the American Medical Association, spent several weeks in the state during the year seeking to enlarge the membership of the State Association and the American Medical Association. As a result of Dr. Trusler's work, about twenty additional members were secured. Though the returns in point of members were small, there is good reason to believe that the earnest efforts put forth by Dr. Trusler resulted in an awakening of interest in several counties.

A suggestion has come from the Secretary of the Council on Medical Education of the American Medical Association that this association should have a Committee on Medical Education, which committee should keep in close touch with all the various problems of medical education and advise the State Association in regard to them.

The American Society for the Control of Cancer is anxious that we should have a Cancer Committee, such as is already a standing committee in a number of state medical societies.

In view of the great importance of the subject, your Secretary would suggest, if he may with propriety so do, that a committee composed of not less than five of the ablest men in this association should be created to study the subject of social insurance. It is, undoubtedly, only a matter of time until Tennessee will have enacted laws bearing upon workmen's compensation and compulsory health insurance. It seems only the part of wisdom that this association should be in position to act intelligently in safeguarding the public interest and that of the profession in whatever is proposed concerning this most important question.

It may be well for this body to consider the advisability of the creation of a committee which can represent the association in whatever may become necessary toward providing proper medical attendance upon soldiers and civilians in the

event that war should make necessary the enlistment of large numbers of medical men.

The ever-enlarging business of the office of the Secretary-Editor has again made it necessary to secure better quarters, and this has been done, necessitating a slightly larger expense than in 1916.

The cost of the Journal has grown larger than in previous years, and the tremendous increase in prices of materials and labor of every sort concerned in the printing business has made it impossible to secure any bids for printing the Journal during the next year which are not materially larger than the cost figures for 1916-17. It is a matter for grave concern upon the part of the officers whether the income of the association for the next year will be equal to the necessary outlay. Every item of expense is relatively larger than in preceding years, and the probabilities are that cost prices will increase yet more.

Demands are constantly made upon the Secretary for service which he can hardly render because of the expense which would be incurred.

The supply of printed copies of the Constitution and By-Laws has been exhausted, and many requests for these have had to be refused because of the prohibitive cost of printing. This is only one of the numerous legitimate demands which should be promptly met, but which cannot be unless certain assurance could be had that the income of the association would not fall short of the amount actually needed to carry on necessary activities.

The income of the association is derived from membership dues, advertising space sold, subscriptions, and exhibit space at the annual meetings.

Expenditures are for printing the Journal, mailing and illustrations for the Journal, commissions on advertising, office rent, office supplies, telephone and telegraph service, employment of official stenographers for the general sessions, the House of Delegates and the Section on Ophthalmology and Otolaryngology at the annual meetings, rent of meeting place, expenses of delegates to the American Medical Association, expenses of committees, honorarium for the Treasurer, salary of the Secretary and salary of stenographer, and incidentals.

Receipts for the past year have been, as will be noted in the report of the Treasurer, \$6,321.13;

and the total expenditures have been \$5,825.38. It is necessary that a working balance should be on hand at all times. We have been dangerously near the edge at some time in every past year. With more than 1,600 physicians of the state embraced in our membership, it does not seem that we can reasonably hope to effect any great increase of income from membership dues at the present figure. We must look, then, if our income is to be made larger, to an increased advertising patronage. This we could secure if the members of the association would coöperate to effect. The advertisers in the Journal are absolutely dependable, we believe, and are in every way deserving of our patronage. The goods which they sell are as good as the best, and are such as our members must have. By the simple process of buying what we must buy from those who have to sell and who use the advertising columns of our Journal, we can at least make secure the advertising patronage we already have, and, it is believed, can easily make the income from this source larger.

The Journal is not what it should be. Difficulty is encountered in securing desirable contributions other than the papers read at the annual meetings of the association. The editor is fully sensible of his own incapacity, and so has done his utmost best. From a few of the many to whom he has appealed for help toward making the Journal better, contributions have come for which heartfelt gratitude is here expressed. Our efforts to make the Journal more nearly a record of the life and work of the medical profession of Tennessee have met with poor success.

It is with sincere pleasure that it is here recorded that the secretaries of the component county societies have reported more promptly and more accurately during the past year than at any time during the service of the present Secretary. This has made possible more nearly perfect records and more businesslike administration of the affairs of the association. An occasional complaint is yet received from an individual member who has not received his Journal and whose name, we find upon investigation, has not been reported. Occasionally, too, but more rarely, complaints are received from members whose names have been reported—this in spite of the fact that every effort is made to keep the mailing list of the Journal correct in every detail.

Grateful acknowledgment is here made for the many helpful kindnesses received from officers of the association and of county societies, as well as from many individual members, all of whom have contributed in one way or another for the general welfare of the association.

Miss Miller, assistant to the Secretary, has discharged her every duty in a most faithful and creditable manner, and to her is due in large manner whatever of praise and credit may rightly be given for what seems to be the best features of the administration of the affairs of the association.

This report is intended to cover the year from April 1, 1916, to April 1, 1917, except in the matter of membership, which is shown each year from January 1 to December 31. All moneys incoming belonging to the association pass through the Secretary's hands to the Treasurer, and an accounting is, therefore, given of these in Tables I. and II., which follow.

Respectfully submitted,
OLIN WEST,
Secretary.

Nashville, Tenn., April 3, 1917.

TABLE I.		
RECEIPTS FROM MEMBERSHIP DUES, INCLUDING MEDICAL DEFENSE ASSESSMENTS.		
April		
8 Dr. H. H. McCampbell, Knox County-----	\$	4 00
8 Dr. H. P. Larimore, Hamilton County-----		4 00
(1914 and 1915 dues)		
8 Dr. H. P. Larimore, Hamilton County-----		4 00
8 Dr. H. P. Larimore, Hamilton County-----		2 00
8 Dr. H. P. Larimore, Hamilton County-----		8 00
8 Dr. W. P. Allen, Rhea County-----		5 00
(\$1 Medical Defense)		
8 Dr. M. E. Rust, Fayette County-----		2 00
8 Dr. J. D. Carlton, Obion County-----		2 00
8 Dr. J. D. Carlton, Obion County-----		2 00
8 Dr. B. M. Little, Montgomery County-----		2 00
8 Dr. J. M. Crider, Decatur County-----		2 00
8 Dr. M. A. Blanton, Greene County-----		2 00
8 Dr. B. M. Tittsworth, Jefferson County-----		3 00
(\$1 Medical Defense)		
8 Dr. W. E. Gallion, Morgan County-----		2 00
8 Dr. W. E. Gallion, Morgan County-----		2 00
8 Dr. W. E. Gallion, Morgan County-----		2 00
8 Dr. W. E. Gallion, Morgan County-----		2 00
8 Dr. W. Likely Simpson, Shelby County----		6 00
8 Dr. W. Likely Simpson, Shelby County----		6 00
8 Dr. W. Likely Simpson, Shelby County----		20 00
8 Dr. W. Likely Simpson, Shelby County----		20 00
8 Dr. W. Likely Simpson, Shelby County----		20 00
8 Dr. W. Likely Simpson, Shelby County----		20 00
10 Dr. T. E. Sawyer, Weakley County-----		3 00
(\$1 Medical Defense)		
10 Dr. John R. Parker, Sumner County-----		25 00
(\$7 Medical Defense)		
11 Dr. W. R. Irish, Campbell County (to pay for check of March 23)-----		2 00
11 Dr. B. F. Fyke, Robertson County-----		2 00

13 Dr. E. H. Jones, Rutherford County-----	\$ 2 00
13 Dr. Dabney Minor, Bradley County-----	14 00
13 Dr. W. K. Vance, Sullivan County-----	8 00
15 Dr. W. K. Vance, Sullivan County-----	2 00
17 Dr. T. E. Sawyer, Weakley County-----	3 00
(\$1 Medical Defense)	
17 Dr. H. P. Larimore, Hamilton County-----	14 00
20 Dr. Charles Griffith, Coffee County-----	2 00
20 Dr. B. M. Tittsworth, Jefferson County-----	3 00
(\$1 Medical Defense)	
21 Dr. W. Likely Simpson, Shelby County-----	20 00
24 Dr. L. J. Lindsey, Tipton County-----	21 00
(\$7 Medical Defense)	
24 Dr. J. D. Carlton, Obion County-----	2 00
25 Dr. W. T. Bell, McNairy County-----	6 00
25 Dr. W. K. Vance, Sullivan County-----	6 00
26 Dr. Charles Griffith, Coffee County-----	2 00
28 Dr. T. A. Patrick, Lincoln County-----	2 00
29 Dr. LeRoy Wilkins, Dyer County-----	20 00
(\$4 Medical Defense)	
	\$ 321 00

May	
2 Dr. J. D. Carlton, Obion County-----	\$ 2 00
2 Dr. J. H. McSwain, Henry County-----	2 00
4 Dr. W. Likely Simpson, Shelby County-----	10 00
4 Dr. W. P. Allen, Rhea County-----	2 00
5 Dr. M. E. Rust, Fayette County-----	4 00
5 Dr. U. G. Jones, Anderson County-----	4 00
6 Dr. H. P. Larimore, Hamilton County-----	6 00
11 Dr. F. M. Boyatt, Scott County-----	3 00
(\$1 Medical Defense)	
11 Dr. J. D. Carlton, Obion County-----	2 00
11 Dr. S. T. Parker, Henderson County-----	2 00
12 Dr. J. S. Lyons, Hawkins County-----	8 00
15 Dr. J. D. Carlton, Obion County-----	2 00
17 Dr. J. D. Carlton, Obion County-----	2 00
18 Dr. C. P. Martin, Putnam County-----	6 00
(\$2 Medical Defense)	
19 Dr. W. W. Hill, Roane County-----	2 00
20 Dr. Dabney Minor, Bradley County-----	2 00
22 Dr. T. J. Hickman, Loudon County-----	4 00
(\$1 Medical Defense)	
24 Dr. J. D. Carlton, Obion County-----	2 00
24 Dr. J. D. Carlton, Obion County-----	16 00
(\$4 Medical Defense)	
25 Dr. B. F. Fyke, Robertson County-----	2 00
26 Dr. E. W. Cocke, Hardeman County-----	2 00
26 Dr. G. A. Brandon (Secretary Parker), Henderson County-----	2 00
27 Dr. J. L. Edwards, Haywood County-----	4 00
29 Dr. L. J. Lindsey, Tipton County-----	8 00
(\$2 Medical Defense)	
29 Dr. H. Claude Guerin, Dickson County-----	2 00
30 Dr. W. Likely Simpson, Shelby County-----	28 00
30 Dr. W. P. Allen, Rhea County-----	2 00
30 Dr. H. P. Larimore, Hamilton County-----	12 00
(\$1, 1915 dues)	
30 Dr. G. F. Aycock, Davidson County-----	16 00
	\$ 159 00

June	
1 Dr. John R. Parker, Sumner County-----	\$ 3 00
(\$1 Medical Defense)	
2 Dr. M. A. Blanton, Greene County-----	2 00
6 Dr. W. G. Saunders, Madison County-----	4 00
6 Dr. B. H. Woodward, Giles County-----	3 00
(\$1 Medical Defense)	
8 Dr. T. E. Sawyer, Weakley County-----	3 00
(\$1 Medical Defense)	
9 Dr. M. E. Rust, Fayette County-----	2 00
14 Dr. C. P. Martin, Putnam County-----	3 00
(\$1 Medical Defense)	
15 Dr. W. K. Vance, Sullivan County-----	14 00
21 Dr. G. F. Aycock, Davidson County-----	14 00
30 Dr. E. W. Cocke, Hardeman County-----	2 00
	\$ 50 00

July	
5 Dr. H. H. McCampbell, Knox County-----	\$ 2 00
5 Dr. W. G. Saunders, Madison County-----	4 00
6 Dr. M. A. Beasley, Maury County-----	2 00
10 Dr. W. K. Vance, Sullivan County-----	4 00
11 Drs. Lew and Blue, Shelby County-----	2 00
(\$2 Medical Defense)	
11 Dr. T. J. Hickman, Loudon County-----	2 00
11 Dr. B. J. High, Smith County-----	2 00
12 Dr. L. J. Lindsey, Tipton County-----	3 00
(\$1 Medical Defense)	
17 Dr. H. H. McCampbell, Knox County-----	2 00
17 Dr. J. H. McSwain, Henry County-----	2 00
17 Dr. H. P. Larimore, Hamilton County-----	4 00
(\$2, 1915 dues)	
17 Dr. J. W. Cox, Washington County-----	5 00
(\$1 Medical Defense)	
24 Dr. M. A. Blanton, Greene County-----	2 00
25 Dr. E. S. Hopper, Crockett County-----	2 00
27 Dr. M. E. Rust, Fayette County-----	4 00
28 Dr. Dabney Minor, Bradley County-----	2 00
28 Dr. J. D. Alexander, Lake County-----	2 00
31 Dr. J. L. Edwards, Haywood County-----	4 00
31 Dr. W. Likely Simpson, Shelby County-----	6 00
	\$ 56 00

August	
1 Dr. J. W. Sanford, Lauderdale County-----	\$ 2 00
21 Dr. B. J. High, Smith County-----	2 00
	\$ 4 00
September	
14 Dr. T. E. Sawyers, Weakley County-----	\$ 8 00
(\$2 Medical Defense)	
22 Dr. W. W. Hill, Roane County-----	2 00
23 Dr. W. Likely Simpson, Shelby County-----	8 00
25 Dr. H. Claude Guerin, Dickson County-----	2 00
26 Dr. H. P. Larimore, Hamilton County-----	2 00
26 Dr. E. H. Jones, Rutherford County-----	6 00
	\$ 28 00

October	
2 Dr. E. W. Cocke, Hardeman County-----	\$ 2 00
5 Dr. E. LeRoy Wilkins, Dyer County-----	2 00
6 Dr. H. P. Larimore, Hamilton County-----	6 00
12 Dr. J. D. Carlton, Obion County-----	2 00
16 Dr. W. Likely Simpson, Shelby County-----	2 00
18 Dr. W. T. Bell, McNairy County-----	1 00
(\$1 Medical Defense)	
19 Dr. W. Likely Simpson, Shelby County-----	6 00
23 Dr. T. E. Sawyer, Weakley County-----	3 00
(\$1 Medical Defense)	
25 Dr. W. Likely Simpson, Shelby County-----	2 00
26 Dr. G. F. Aycock, Davidson County-----	18 00
	\$ 44 00

November	
15 Dr. John R. Parker, Sumner County-----	\$ 3 00
(\$1 Medical Defense)	
16 Dr. E. C. Freeman, Giles County-----	4 00
18 Dr. H. P. Larimore, Hamilton County-----	6 00
(\$1, 1914 dues)	
25 Dr. A. F. Richards, White County-----	2 00
	\$ 15 00

December	
16 Dr. W. Likely Simpson, Shelby County-----	\$ 2 00
21 Dr. H. P. Larimore, Hamilton County-----	6 00
(1916 dues)	
21 Dr. H. P. Larimore, Hamilton County-----	8 00
(1915 dues)	
21 Dr. H. P. Larimore, Hamilton County-----	2 00
(1914 dues)	
27 Dr. H. P. Larimore, Hamilton County-----	10 00
(\$2, 1915 dues)	
28 Dr. H. H. McCampbell, Knox County-----	4 00

4 Dr. W. R. Irish, Campbell County-----	\$ 15 00	22 Dr. S. T. Hardison, Marshall County-----	\$ 54 00
(\$3 Medical Defense)		(\$8 Medical Defense)	
14 Dr. C. P. Martin, Putnam County-----	21 00	22 Dr. B. M. Little, Montgomery County-----	3 00
(\$7 Medical Defense)		(\$1 Medical Defense)	
19 Dr. E. LeRoy Wilkins, Dyer County-----	21 00	22 Dr. K. S. Howlett, Williamson County-----	30 00
(\$5 Medical Defense)		(\$6 Medical Defense)	
19 Dr. Douglas Hayes, Grundy County-----	8 00	22 Dr. H. P. Larimore, Hamilton County-----	18 00
(\$2 Medical Defense)		22 Dr. R. M. Young, Knox County-----	76 00
20 Dr. Douglas Hayes, Grundy County-----	2 00	22 Dr. J. D. Alexander, Lake County-----	18 00
21 Dr. H. P. Larimore, Hamilton County-----	10 00	(\$2 Medical Defense)	
27 Dr. A. J. Guinn, Polk County-----	18 00	24 Dr. W. W. Hill, Roane County-----	23 00
27 Dr. T. M. Roberts, Monroe County-----	33 00	(\$3 Medical Defense)	
(\$11 Medical Defense)		24 Dr. J. L. Edwards, Haywood County-----	2 00
28 Dr. Douglas Hayes, Grundy County-----	6 00	24 Dr. F. M. Boyatt, Scott County-----	3 00
(\$2 Medical Defense)		(\$1 Medical Defense)	
30 Dr. Owen H. Williams, Wayne County-----	10 00	24 Dr. T. E. Sawyer, Weakley County-----	20 00
30 Dr. Owen H. Williams, Wayne County-----	2 00	(\$4 Medical Defense)	
30 Dr. Owen H. Williams, Wayne County-----	4 00	27 Dr. T. J. Hickman, Loudon County-----	2 00
		31 Dr. A. B. Qualls, Overton County-----	15 00
		(\$5 Medical Defense)	
	\$ 182 00	31 Dr. W. T. Bell, McNairy County-----	22 00
		(\$6 Medical Defense)	
January			\$1,321 50
2 Dr. R. A. Whitaker, Decatur County-----	\$ 12 00	February	
2 Dr. H. P. Larimore, Hamilton County-----	22 00	3 Dr. Hartwell Weaver, Dickson County-----	\$ 26 00
(\$6, 1916 dues)		(\$4 Medical Defense)	
2 Dr. W. G. Saunders, Madison County-----	2 00	3 Dr. Owen H. Williams, Hardin County-----	2 00
2 Dr. B. J. High, Smith County-----	32 00	3 Dr. E. S. Hopper, Crockett County-----	2 00
2 Dr. F. M. Boyatt, Scott County-----	18 00	5 Dr. H. S. Shoulders, Robertson County-----	18 00
(\$6 Medical Defense)		(\$6 Medical Defense)	
2 Dr. A. F. Richards, White County-----	33 00	6 Dr. E. E. Northcutt, Warren County-----	13 00
(\$11 Medical Defense)		(\$1 Medical Defense)	
2 Dr. G. E. Aycock, Davidson County-----	42 00	6 Dr. Douglas Hayes, Grundy County-----	3 00
(\$4, 1916 dues)		(\$1 Medical Defense)	
4 Dr. M. A. Beasley, Maury County-----	48 00	7 Dr. W. G. Saunders, Madison County-----	4 00
(\$2 Medical Defense)		8 Dr. W. G. Saunders, Madison County-----	4 00
4 Dr. H. P. Larimore, Hamilton County-----	20 00	9 Dr. C. L. Hays, Tipton County-----	6 50
(\$2, 1915; \$5, 1916; \$8, 1917)		12 Dr. H. P. Larimore, Hamilton County-----	12 00
4 Dr. J. T. Hayes, Anderson County-----	18 00	12 Dr. E. M. Fuqua, Davidson County-----	32 00
5 Dr. Walter Dotson, Wilson County-----	28 00	12 Dr. J. T. Hayes, Anderson County-----	2 00
(\$4 Medical Defense)		13 Dr. R. M. Young, Knox County-----	32 00
6 Dr. H. P. Larimore, Hamilton County-----	16 00	15 Dr. W. T. Bell, McNairy County-----	3 50
(\$2, 1916; \$6, 1917)		(\$1 Medical Defense)	
6 Dr. R. A. Whitaker, Decatur County-----	4 00	15 Dr. W. G. Saunders, Madison County-----	2 00
8 Dr. Robert M. Young, Knox County-----	2 00	16 Dr. J. W. Sanford, Lauderdale County-----	60 00
(1916 dues)		(\$20 Medical Defense)	
8 Dr. H. P. Larimore, Hamilton County-----	6 00	19 Dr. W. G. Saunders, Madison County-----	10 00
8 Dr. W. R. Irish, Campbell County-----	10 00	19 Dr. W. K. Vance, Sullivan County-----	36 00
9 Dr. J. O. Wood, Cocke County-----	18 00	20 Dr. C. L. Hays, Tipton County-----	3 00
9 Dr. W. A. Sams, Unicoi County-----	17 00	(\$1 Medical Defense)	
(\$5 Medical Defense)		20 Dr. W. C. Brown, Chester County-----	4 00
10 Dr. Walter Dotson, Wilson County-----	3 00	21 Dr. W. G. Saunders, Madison County-----	4 00
(\$1 Medical Defense)		24 Dr. M. A. Blanton, Greene County-----	41 00
11 Dr. J. D. Carlton, Obion County-----	39 00	(\$5 Medical Defense)	
(\$1 Medical Defense)		26 Dr. F. B. Reagor, Bedford County-----	34 00
11 Dr. B. J. High, Smith County-----	2 00	26 Dr. W. W. Hill, Roane County-----	13 00
11 Dr. T. J. Hickman, Loudon County-----	13 00	(\$3 Medical Defense)	
(\$1 Medical Defense)		26 Dr. J. R. Richardson, Blount County-----	20 00
11 Dr. J. L. Edwards, Haywood County-----	14 00	28 Dr. W. T. Bell, McNairy County-----	6 00
(\$4 Medical Defense)		(\$2 Medical Defense)	
12 Dr. S. T. Parker, Henderson County-----	54 00	28 Dr. B. M. Tittsworth, Jefferson County-----	3 00
(\$8 Medical Defense)		(\$1 Medical Defense)	
15 Dr. C. T. Carroll, Jr., Hamblen County-----	51 00		
(\$17 Medical Defense)			
15 Dr. C. L. Hays, Tipton County-----	42 50		
15 Dr. W. G. Saunders, Madison County-----	20 00		
15 Dr. H. P. Larimore, Hamilton County-----	16 00		
15 Dr. E. M. Fuqua, Davidson County-----	142 00		
(\$2, 1916 dues)			
16 Dr. R. H. Miller, Shelby County-----	210 00	March	
16 Dr. B. M. Tittsworth, Jefferson County-----	27 00	1 Dr. T. E. Sawyer, Weakley County-----	\$ 6 00
(\$9 Medical Defense)		1 Dr. J. H. Williams, Carroll County-----	24 00
16 Dr. T. J. Hickman, Loudon County-----	2 00	1 Dr. F. M. Boyatt, Scott County-----	2 00
17 Dr. H. P. Larimore, Hamilton County-----	2 00	3 Dr. J. W. Sanford, Lauderdale County-----	15 00
(\$2 Medical Defense)		(\$4 Medical Defense)	
17 Dr. E. LeRoy Wilkins, Dyer County-----	26 00	3 Dr. Hartwell Weaver, Dickson County-----	2 00
(\$8 Medical Defense)		3 Dr. R. H. Miller, Shelby County-----	38 00
17 Dr. E. W. Mabry, Jackson County-----	24 00	5 Dr. H. P. Larimore, Hamilton County-----	4 00
(\$8 Medical Defense)		7 Dr. E. M. Fuqua, Davidson County-----	16 00
		(\$2, 1916 dues)	

7 Dr. H. D. Miller, Washington County-----	\$ 68 00	28 Dr. H. D. Miller, Washington County-----	\$ 3 00
(\$14 Medical Defense)		(\$1 Medical Defense)	
7 Dr. J. W. Rogers, Sevier County-----	8 00	29 Dr. Charles Griffith, Coffee County-----	6 00
8 Dr. W. G. Saunders, Madison County-----	2 00	(\$2 Medical Defense)	
8 Dr. J. W. Sanford, Lauderdale County-----	3 00	29 Dr. Hartwell Weaver, Dickson County-----	4 00
(\$1 Medical Defense)		29 Dr. H. C. Moorman, Fayette County-----	5 00
8 Dr. T. A. Patrick, Lincoln County-----	40 00	(\$1 Medical Defense)	
9 Dr. W. K. Vance, Sullivan County-----	10 00	29 Dr. W. G. Saunders, Madison County-----	10 00
10 Dr. Samuel T. Parker, Henderson County--	4 00	29 Dr. B. T. Bennett, Gibson County-----	3 00
(\$2 Medical Defense)		(\$1 Medical Defense)	
12 Dr. Robert M. Young, Knox County-----	38 00	29 Dr. A. Y. Kirby, Macon County-----	16 00
12 Dr. H. C. Moorman, Fayette County-----	19 00	(\$2 Medical Defense)	
(\$1 Medical Defense)		30 Dr. R. H. Miller, Shelby County-----	28 00
12 Dr. W. K. Edwards, Hickman County-----	5 00	30 Dr. B. M. Little, Montgomery County-----	33 00
(\$5 Medical Defense)		(\$9 Medical Defense)	
12 Dr. W. K. Edwards, Hickman County-----	14 00	30 Dr. E. W. Cocke, Hardeman County-----	4 00
14 Dr. T. M. Roberts, Monroe County-----	3 00	31 Dr. John P. Grisard, Franklin County-----	22 00
(\$1 Medical Defense)		31 Dr. Dabney Minor, Bradley County-----	6 00
15 Dr. E. LeRoy Wilkins, Dyer County-----	19 00	31 Dr. Dabney Minor, Bradley County-----	1 00
(\$5 Medical Defense)		(\$1 Medical Defense)	
15 Dr. E. LeRoy Wilkins, Dyer County-----	3 00	31 Dr. E. M. Fuqua, Davidson County-----	54 00
(\$1 Medical Defense)		31 Dr. M. A. Beasley, Maury County-----	11 00
15 Dr. K. S. Howlett, Williamson County----	3 00	(\$1 Medical Defense)	
(\$1 Medical Defense)		31 Dr. W. P. Allen, Rhea County-----	2 00
15 Dr. John R. Parker, Sumner County-----	24 00	31 Dr. J. W. Sanford, Lauderdale County-----	3 00
16 Dr. W. W. Hill, Roane County-----	2 00	(\$1 Medical Defense)	
16 Dr. J. R. Richardson, Blount County-----	6 00	31 Dr. H. P. Larimore, Hamilton County-----	8 00
(\$2 Medical Defense)		31 Dr. H. D. Miller, Washington County-----	3 00
16 Dr. E. E. Northcutt, Warren County-----	1 00	(\$1 Medical Defense)	
(\$1 Medical Defense)		31 Dr. R. L. Hyder (dues for himself)-----	2 00
19 Dr. V. L. Lewis, Cumberland County-----	8 00	31 Dr. W. G. Saunders, Madison County-----	4 00
19 Dr. E. W. Cocke, Hardeman County-----	14 00	31 Dr. R. H. Miller, Shelby County-----	20 00
19 Dr. Dabney Minor, Bradley County-----	12 00	31 Dr. J. H. McSwain, Henry County-----	4 00
19 Dr. Dabney Minor, Bradley County-----	3 00		
(\$3 Medical Defense)			\$1,075 00
19 Dr. H. P. Larimore, Hamilton County-----	14 00		
19 Dr. W. K. Vance, Sullivan County-----	8 00		
20 Dr. R. H. Miller, Shelby County-----	14 00		
20 Dr. H. D. Miller, Washington County-----	2 00		
20 Dr. S. T. Parker, Henderson County-----	2 00		
21 Dr. W. C. Brown, Chester County-----	2 00		
21 Dr. John R. Parker, Sumner County-----	3 00		
(\$1 Medical Defense)			
22 Dr. S. T. Hardison, Marshall County-----	3 00		
(\$1, overpaid dues)			
22 Dr. R. H. Miller, Shelby County-----	38 00		
22 Dr. H. S. Shoulders, Robertson County-----	9 00		
(\$1 Medical Defense)			
23 Dr. B. T. Bennett, Gibson County-----	65 00		
(\$19 Medical Defense)			
23 Dr. O. H. Williams, Hardin County-----	10 00		
(For check of December 30)			
24 Dr. J. S. Lyons, Hawkins County-----	24 00		
24 Dr. M. A. Blanton, Greene County-----	10 00		
24 Dr. F. M. Boyatt, Scott County-----	3 00		
(\$1 Medical Defense)			
26 Dr. E. C. Freeman, Giles County-----	26 00		
26 Dr. L. J. Lindsey, Tipton County-----	3 00		
(\$1 Medical Defense)			
26 Dr. T. E. Sawyer, Weakley County-----	8 00		
(\$2 Medical Defense)			
26 Dr. C. T. Love, Crockett County-----	2 00		
26 Dr. H. P. Larimore, Hamilton County-----	16 00		
26 Dr. E. LeRoy Wilkins, Dyer County-----	11 00		
(\$1 Medical Defense)			
26 Dr. B. T. Bennett, Gibson County-----	3 00		
(\$1 Medical Defense)			
26 Dr. Charles Griffith, Coffee County-----	15 00		
(\$5 Medical Defense)			
27 Dr. Robert M. Young, Knox County-----	26 00		
27 Dr. J. L. Edwards, Haywood County-----	4 00		
28 Dr. R. H. Miller, Shelby County-----	46 00		
28 Dr. J. H. McSwain, Henry County-----	27 00		
(\$3 Medical Defense)			
28 Dr. W. P. Allen, Rhea County-----	13 00		
(\$1 Medical Defense)			

TABLE II.

RECEIPTS FROM ADVERTISING, SUBSCRIPTIONS, ETC.

April	
8 Watauga Sanitarium-----	\$ 52 56
8 Coöperative Medical Advertising Bureau----	66 71
8 Katherine L. Storm-----	2 50
8 City View Sanitarium-----	7 50
8 Dr. J. R. Storie (subscription)-----	2 00
11 Drs. Lewis and Blue-----	6 00
11 Ambrose Printing Company-----	3 33
11 Southern Ice Company-----	10 00
12 N. C. & St. L. Ry.-----	15 00
12 Seilaz Café-----	12 00
13 Model Steam Laundry-----	10 00
13 Theo. Tafel Company-----	5 00
15 Woman's Hospital-----	5 42
17 Parke, Davis & Co.-----	7 13
17 F. A. Hardy & Co.-----	5 00
17 H. K. Mulford Company-----	9 50
20 Dr. G. C. Horne (one year's subscription)---	2 00
20 Lynnhurst Sanitarium-----	15 00
20 Fairchild Bros. & Foster-----	7 50
25 Cincinnati Sanitarium-----	5 00
27 Oxford Retreat-----	2 50
28 Drs. Petty and Wallace-----	7 50
	\$ 259 15
May	
3 Katherine L. Storm-----	\$ 2 50
9 Ambrose Printing Company-----	3 33
9 T. E. Burns Company-----	8 00
11 Armour & Co.-----	7 00
11 Dr. H. E. Goetz' Sanitarium-----	15 00
11 Theo. Tafel Company-----	5 00
12 Woman's Hospital-----	5 42
12 Southern Ice Company-----	10 00
12 Coöperative Medical Advertising Bureau----	68 48
13 Parke, Davis & Co.-----	7 13
16 F. A. Hardy & Co.-----	5 00
17 Fairchild Bros. & Foster-----	7 50

17 Orchard Springs Sanitarium -----	\$ 15 00
19 Oxford Retreat -----	2 50
24 Cincinnati Sanitarium -----	5 00
26 H. K. Mulford Company -----	9 50

\$ 176 36

June

3 City View Sanitarium -----	\$ 15 00
6 Southern Ice Company -----	10 00
7 Katherine L. Storm -----	2 50
8 Theo. Tafel Company -----	5 00
9 Dr. J. Hugh Carter (card space) -----	5 00
9 Coöperative Medical Advertising Bureau -----	73 04
9 Bradley-Newman Cigar Company -----	12 00
10 Elizabeth C. Kane (card space) -----	5 00
10 Max Henning (card space) -----	5 00
10 O. S. McCown (card space) -----	5 00
10 Ambrose Printing Company -----	3 33
13 Woman's Hospital -----	5 42
14 Parke, Davis & Co. -----	7 13
16 Armour & Co. -----	7 00
16 Dr. S. T. Rucker (card space) -----	5 00
19 H. K. Mulford Company -----	9 50
20 L. & N. Railroad Company (advertising) -----	15 00
21 Fairchild Bros. & Foster -----	7 50
22 F. A. Hardy & Co. -----	5 00
26 Oxford Retreat -----	2 50
27 W. G. Bogart (card space) -----	5 00
27 Cincinnati Sanitarium -----	5 00

\$ 214 92

July

3 City View Sanitarium -----	\$ 7 50
5 Theo. Tafel Company -----	5 00
5 New Orleans Polyclinic -----	15 00
7 Southern Ice Company -----	10 00
7 Chapman Drug Company -----	22 50
7 Dr. Katherine L. Storm -----	2 50
10 Parke, Davis & Co. -----	7 13
11 Drs. Lewis and Blue -----	6 00
13 Ambrose Printing Company -----	3 33
14 Coöperative Medical Advertising Bureau -----	70 39
17 Armour & Co. -----	7 00
17 Woman's Hospital -----	5 42
17 F. A. Hardy & Co. -----	5 00
20 Fairchild Bros. & Foster -----	7 50
20 Oxford Retreat -----	2 50
26 Cincinnati Sanitarium -----	5 00
27 Haury & Sons -----	8 00

\$ 189 77

August

2 City View Sanitarium and Nurses -----	\$ 10 50
2 Theo. Tafel Company -----	5 00
7 Katherine L. Storm -----	2 50
9 Lynnhurst Sanitarium -----	15 00
10 Coöperative Medical Advertising Bureau -----	74 50
11 Allen H. Bunce -----	5 00
11 Parke, Davis & Co. -----	7 13
11 McQuiddy Printing Company -----	10 84
14 Southern Ice Company -----	10 00
14 Oxford Retreat -----	2 50
14 R. L. Polk & Co. (subscription) -----	2 00
14 Ambrose Printing Company -----	3 33
15 Woman's Hospital -----	5 42
15 Armour & Co. -----	7 00
17 F. A. Hardy & Co. -----	5 00
17 Fairchild Bros. & Foster -----	7 50
26 Cincinnati Sanitarium -----	5 00

\$ 178 22

September

9 Vanderbilt University -----	\$ 25 00
11 Parke, Davis & Co. -----	7 13
12 Southern Ice Company -----	10 00
12 Ambrose Printing Company -----	3 33
12 Drs. Petty and Wallace -----	7 50

12 City View Sanitarium -----	\$ 7 50
12 Coöperative Medical Advertising Bureau -----	74 00
12 McQuiddy Printing Company -----	5 42
12 F. A. Hardy & Co. -----	5 00
13 Katherine L. Storm -----	2 50
13 Nashville Pure Milk Company -----	2 92
13 Armour & Co. -----	7 00
14 Dr. Allen H. Bunce -----	5 00
14 St. Cecilia Academy -----	4 00
16 Woman's Hospital -----	5 42
18 Oxford Retreat -----	2 50
27 Cincinnati Sanitarium -----	5 00
28 Fairchild Bros. & Foster -----	7 50
29 Miss Annie Smythe -----	5 42

\$ 192 14

October

6 Ward-Belmont -----	\$ 8 00
6 Theo. Tafel Company -----	10 00
6 City View Sanitarium -----	7 50
7 Dr. Katherine L. Storm -----	2 50
10 Coöperative Medical Advertising Bureau -----	71 78
11 Drs. Lewis and Blue -----	6 00
11 Ambrose Printing Company -----	3 33
11 H. K. Mulford Company -----	28 50
11 Armour & Co. -----	7 00
12 McQuiddy Printing Company -----	5 42
12 Southern Ice Company -----	10 00
12 Woman's Hospital -----	5 42
13 Nashville Pure Milk Company -----	2 92
14 Parke, Davis & Co. -----	7 13
17 Dr. Allen H. Bunce -----	5 00
17 F. A. Hardy & Co. -----	5 00
19 Oxford Retreat -----	2 50
19 Lynnhurst Sanitarium -----	15 00
21 Broadway Drug Company -----	5 00
25 University of Tennessee -----	15 00
26 Fairchild Bros. & Foster -----	7 50
26 Cincinnati Sanitarium -----	5 00
28 Drs. Petty and Wallace -----	7 50

\$ 243 00

November

2 George S. Johnston & Co. -----	\$ 54 15
3 City View Sanitarium -----	7 50
6 Katherine L. Storm -----	2 50
8 Miss Annie Smythe -----	5 42
8 Nashville Surgical Supply Company -----	43 36
10 Ambrose Printing Company -----	3 33
11 McQuiddy Printing Company -----	5 42
11 Parke, Davis & Co. -----	7 13
11 Mr. John S. Browne (Journals) -----	2 40
13 Armour & Co. -----	7 00
15 Southern Ice Company -----	10 00
16 Coöperative Medical Advertising Bureau -----	73 55
16 Woman's Hospital -----	5 42
17 F. A. Hardy & Co. -----	5 00
17 Fairchild Bros. & Foster -----	7 50
20 Dr. A. Weil (1916 and 1917 subscription) -----	4 00
23 Oxford Retreat -----	2 50
27 Cincinnati Sanitarium -----	5 00

\$ 251 18

December

4 Broadway Drug Company -----	\$ 10 00
4 City View Sanitarium -----	7 50
4 Katherine L. Storm -----	2 50
9 Ambrose Printing Company -----	3 33
9 Parke, Davis & Co. -----	7 13
11 Dr. Allen H. Bunce -----	10 00
12 McQuiddy Printing Company -----	5 42
12 Nashville Surgical Supply Company -----	5 42
12 Coöperative Medical Advertising Bureau -----	70 50
13 H. K. Mulford & Co. -----	19 00
14 Nashville Pure Milk Company -----	5 84
15 Southern Ice Company -----	10 00
16 Oxford Retreat -----	2 50

18 F. A. Hardy & Co. -----	\$ 5 00
18 Armour & Co. -----	7 00
23 Fairchild Bros. & Foster -----	7 50
27 Cincinnati Sanitarium -----	5 00
27 Charles W. Bryson -----	11 00
29 Theo. Tafel Company -----	10 00

January \$ 204 64

5 Frank & Co. -----	\$ 12 00
8 Armour & Co. -----	7 00
8 Orchard Springs Sanitarium -----	30 00
9 Dr. G. B. Grothaus (advertisement) -----	3 00
9 Katherine L. Storm -----	2 50
10 Parke, Davis & Co. -----	7 13
10 Mrs. Sweeney (for advertising) -----	5 00
11 McQuiddy Printing Company -----	5 42
11 Nashville Surgical Supply Company -----	5 42
11 Dr. Allen H. Bunce -----	5 00
11 Ambrose Printing Company -----	3 33
12 Nashville Pure Milk Company -----	2 92
15 Fairchild Bros. & Foster -----	7 50
15 Coöperative Medical Advertising Bureau -----	67 46
17 F. A. Hardy & Co. -----	5 00
17 Oxford Retreat -----	2 50
22 Southern Ice Company -----	10 00
22 Lynnhurst Sanitarium -----	15 00
23 Drs. Petty and Wallace -----	7 50
24 Model Steam Laundry -----	26 64
29 Cincinnati Sanitarium -----	5 00

February \$ 235 32

1 City View Sanitarium -----	\$ 7 50
9 Southern Ice Company -----	10 00
9 Katherine L. Storm -----	2 50
9 Theo. Tafel Company -----	10 00
9 Dr. R. S. Plumlee (subscription) -----	4 00
12 Coöperative Medical Advertising Bureau -----	79 37
12 Nashville Surgical Supply Company -----	5 42
12 Parke, Davis & Co. -----	7 13
12 Armour & Co. -----	7 00
12 McQuiddy Printing Company -----	5 42
13 Nashville Pure Milk Company -----	2 92
13 Ambrose Printing Company -----	3 33
16 Miss Annie Sanders (registry of nurses) -----	5 00
16 F. A. Hardy & Co. -----	5 00
19 Oxford Retreat -----	2 50
19 Dr. Allen H. Bunce -----	5 00
24 Cincinnati Sanitarium -----	5 00
26 H. K. Mulford Company -----	19 00
28 Fairchild Bros. & Foster -----	7 50

March \$ 193 59

5 City View Sanitarium -----	\$ 7 50
5 Parke, Davis & Co. -----	7 13
7 Todd & Armistead -----	22 50
9 Armstrong's -----	8 00
9 Eat Shop -----	8 00
10 The Rhame Mercantile Agency -----	5 00
10 Exhibit Space for Fairchild Bros. & Foster -----	10 00
10 McQuiddy Printing Company -----	5 42
12 Nashville Surgical Supply Company -----	5 42
12 Southern Ice Company -----	10 00
12 Coöperative Medical Advertising Bureau -----	87 53
12 Ambrose Printing Company -----	3 33
14 Nashville Pure Milk Company -----	2 92
15 Oxford Retreat -----	2 50
16 F. A. Hardy & Co. -----	5 00
19 Dr. Katherine L. Storm -----	2 50
19 H. K. Mulford Company -----	9 50
22 Armour & Co. -----	7 00
22 Cincinnati Sanitarium -----	5 00
27 Dr. Allen H. Bunce -----	5 00
31 Fairchild Bros. & Foster -----	7 50
31 George S. Johnston & Co. -----	86 64
31 Weder Manufacturing Company (exhibit space) -----	10 00

\$ 323 39

NOTES AND COMMENTS

Dr. F. A. Zoller is also a new resident of Maryville, having gone to this place from Sevierville.

Nearly the whole membership of the Macon County Medical Society attended the annual meeting.

Dr. M. E. Rust, formerly Secretary of the Fayette County Medical Society, has located at Dyersburg.

Dr. R. L. Hyder is now located at Maryville, having moved to the booming metropolis of Blount from Isabella.

Johnson City had a fine delegation present at Nashville, five men having registered from this splendid East Tennessee city.

Dr. E. W. Patton, formerly of Shelbyville, is now in Chattanooga, and is engaged in practice limited to eye, ear, nose, and throat work.

The records of the members of the Tennessee Medical Association who saw service with our troops on the Mexican border were the records that we looked for—all A+.

It was gratifying to note the presence at the Nashville meeting of four members of the Sullivan-Carter-Johnson County Society—two from Sullivan and two from Johnson. These gentlemen had a long way to come.

Every county society in the association has reported for 1917 except those of McMinn and Wayne Counties. Wayne County was organized during the last year, but McMinn has been organized a long time and should know better.

Dr. J. Victor Henderson, formerly of Lafollette, has located in Knoxville for practice in obstetrics, diseases of women, and surgery. Dr. Henderson has been working in New York hospitals for two years, and is most heartily welcomed back to Tennessee. His office is in the Holston Bank Building, Knoxville.

While thinking of our new advertisers, don't forget those who have been with us for a long time. We feel that every firm and every individual using our advertising columns is absolutely dependable and worthy of your patronage.

The annual meeting of Alienists and Neurologists, under the auspices of the Chicago Medical Society, will be held at the Hotel La Salle, in Chicago, July 10, 11, and 12. Dr. Bayard Holmes, 30 North Michigan Avenue, Chicago, is Secretary.

Dr. Howard C. Curtis has left Hickman and has gone to Texas to make his home in the thriving city of McKinney. We can't quite understand it when one of our men leaves Tennessee for Texas, but our good wishes follow him wherever he goes.

Dr. F. B. Reagor is at work in Chicago hospitals. He should not have gone until after the annual meeting, but his long record of faithful attendance and faithful work in the State Association entitles him to our tender consideration this one time.

The following counties were not represented at Nashville, so far as the register shows: Anderson, Blount, Campbell, Cocke, Hawkins, Hardin, Hamblen, Haywood, Loudon, Monroe, McMinn, McNairy, Scott, Sevier, Carter, Tipton, Unicoi, Warren, and Wayne.

The many friends of Dr. Herbert T. Brooks, Memphis, most sincerely regret the fact that he has been forced to go to California in an effort to regain his health, which has lately become seriously impaired. Dr. Brooks is a useful man in Tennessee medicine, and we need him back at his post, well and strong.

Dr. John W. Stevens, superintendent of City View Sanitarium, Nashville, announces to the many friends of the institution that the tenth anniversary of the sanitarium will be celebrated this month. City View is one of Tennessee's leading institutions for the treatment of mental and nervous diseases and has had a most successful and serviceable career. The Journal extends best wishes for its continued success.

A new advertisement in this number of the Journal is that of the Abbott Laboratories. Chlorazene, the product described in this their first advertisement, is said to be nontoxic, less irritating than sodium hypochlorite, and a very powerful antiseptic agent. It is soluble, and, dissolved, makes the "Dakin-Carrel Solution," which has been used with such marked success in the treatment of wounds in European army hospitals.

The increasing use of laboratory tests in modern medicine, as well as constantly growing patronage, has made necessary a considerable addition to the laboratory facilities of the Battle Creek Sanitarium. In the urinary, fecal, chemical, bacteriological, and pathological departments about thirty persons are employed, a number of them being physicians and college graduates. In addition to the analyses, examinations, etc., in connection with the regular work of the institution, a certain amount of original research work is always carried on. At present investigations are under way to find what carbohydrates will pass farthest through the intestines before undergoing complete digestion. Four cases of fistula near the ileocecal valve have made possible this study. Specimens taken from the fistula are examined and are also compared with those which have passed through the colon. The value of the study lies in the fact that undigested carbohydrates in the intestines lessen or prevent putrefaction. Those which are not absorbed in the earlier stages of the progress toward the colon are, therefore, of especial value.

The Middle Tennessee Medical Association will meet in Fayetteville in regular semiannual session on May 17, 18. The Secretary, Dr. Jack Witherspoon, Nashville, is now arranging the program, and all who desire to present papers at the meeting should communicate with him at once. Fayetteville is a splendid city, with good hotel accommodations, and the meetings of the Middle Tennessee held there in the past have all been well attended. It is expected that this one will be the "best yet."

The full dinner pail is the enemy of tuberculosis.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION**Devoted to the Interests of the Medical Profession of Tennessee****Office of Publication, Suite 349 Doctors' Bldg., Nashville, Tenn****APRIL, 1917****EDITORIALS****OFFICERS FOR 1917-1918.**

The annual election of officers at the Nashville meeting resulted in the following selections: President, Dr. E. T. Newell, Chattanooga; Vice President for East Tennessee, Dr. H. M. Cass, Johnson City; Vice President for West Tennessee, Dr. W. O. Sullivan, Newbern; Vice President for Middle Tennessee, Dr. T. G. Pollard, Nashville; Member of Board of Trustees, Dr. J. F. Gallagher, Nashville; Delegate to American Medical Association, Dr. A. F. Richards, Sparta; alternate, Dr. William Britt Burns, Memphis; Councilors: Second District, Dr. S. R. Miller, Knoxville; Fourth District, Dr. Z. L. Shipley, Cookeville; Sixth District, Dr. W. C. Dixon, Nashville; Eighth District, Dr. A. B. Daney, Jackson; Tenth District, Dr. W. T. Black, Memphis; Secretary, Dr. Olin West, Nashville.

At the meeting of the Board of Trustees, Dr. J. F. Gallagher, Nashville, was made Chairman of the board and Treasurer of the association.

The Committee on Medical Defense—Dr. S. R. Miller, Chairman; Dr. J. L. Crook, and Dr. H. M. Tigert—was continued. Thus was shown the gratitude felt by the association for the splendid work this committee has done.

THE NASHVILLE MEETING.

The eighty-fourth annual meeting of the Tennessee State Medical Association has come and gone. The reports of successes and failures registered during the last year have been made, and it is a matter for sincere congratulations that the account shows the balance on the right side.

The report of the Secretary showed that the largest number of members ever enrolled in the association was in 1916; the largest number ever

reported as enrolled up to April 1 was reported at the Nashville meeting; more county societies were reported as organized than ever before; the registration at the Nashville meeting was the largest in the history of the association; no discordant notes were sounded, but everybody seemed to be looking forward; the report of the Treasurer showed that the association has no debt to pay and that the largest balance ever reported is in the bank to the credit of the Treasurer.

As always, there was some criticism of the program, the meeting place, and of other details. Practically all of this was directed at the Secretary, since he was almost entirely responsible for the status of things criticized. He gladly assumes all responsibility and freely admits his faults and failures; but, at that, he must plead that he did his best.

The Section on Ophthalmology and Otolaryngology was well attended, and an interesting and profitable program was presented.

The inability of Dr. E. G. Ballenger, invited to be the guest of the association, to attend the meeting was a source of keen regret to all present. The addresses of Dr. J. S. McLester, Chancellor J. H. Kirkland, and Frederick R. Green were thoroughly enjoyed and were distinct contributions to the general success of the meeting.

The Nashville meeting was worth while. The Memphis meeting in 1918 is going to be better. Begin to get ready for it now.

HOW YOU CAN HELP.

Recruits for the army and navy are collected from various parts of the state and are sent to one central place for physical examination. It often happens that men who volunteer for enlistment are subjects of some gross ailment or defect, and, when they are sent to the central examination depot, are refused because of physical troubles which are grossly apparent. Of course the government has been put to great expense in the transportation of these men, who offer themselves in good faith, but who are manifestly unfit for service. If the physicians of Tennessee wish to render a very valuable service which they can easily perform for the government, and so save a large expenditure for better use, let them go to recruiting agents who

may be at work in their communities and offer to examine all recruits for gross defects without charge. It will take very little time and effort to discover flatfoot, hernia, gross heart lesions, and other conditions which make men unacceptable as soldiers. We make this appeal to the members of the association upon suggestion from an officer in the Medical Corps of the navy, and we feel very sure that they will respond freely to the appeal.

LEGISLATION ENACTED.

The Journal is informed that the Legislature, lately adjourned, enacted a law which makes "fee splitting" in Tennessee illegal. The buying and selling of patients, never justifiable, is now a punishable offense.

The medical-practice Act was amended so as to make it provide for penalizing any physician who knowingly and willfully signs a misstatement relative to the physical condition of persons examined, this amendment having been made at the instance of insurance companies.

FROM THE WHITE HOUSE.

The following acknowledgment from President Wilson has come to the Secretary of the Tennessee State Medical Association in response to resolutions adopted by the association and to the message sent Mr. Wilson by members of the association while at the dinner on the second evening of the annual meeting:

"THE WHITE HOUSE, WASHINGTON.

"To the Tennessee State Medical Association:

"The President thanks you cordially for the good will which prompted your kind message, which has helped to reassure him and keep him in heart."

THE NASHVILLE REGISTRATION.

The registration of members at the Nashville meeting was above 400—a new mark for attendance. Fifty-two of the sixty-eight county societies were represented, while five counties in which no societies have been organized helped to add to the registration. Of course, Davidson, the county in which the meeting was held, had the greatest number of names on the register. Shelby registered 28; Hamilton, 21; Knox, 18; Maury, 16; Smith, 11; Wilson, 9; Marshall, Bedford, and Rutherford, 8 each; Sumner, White, Madison, Giles, Montgomery, Robertson, Lincoln, and Williamson, 7 each; Dyer, Dickson, and Putnam, 6 each; Macon, Carroll, Washington, and Franklin, 5 each; Decatur and Jackson, 4 each; Lake, Weakley, Henderson, Coffee, Fayette, and Hickman, 3 each; Crockett, Roane, Johnson, Greene, Grundy, Sullivan, Gibson, and Obion, 2 each; and Bradley, Lauderdale, Jefferson, Hardeman, Overton, Henry, Polk, Cumberland, Chester, and Rhea, 1 each.

MEDICAL PREPAREDNESS FOR WAR.

"Under existing conditions it is desirable that every physician, as well as every other loyal citizen of America, should be prepared to render active service to the Federal Government, remembering that the protection afforded by the government has made it possible for its citizens to enjoy liberty, peace, and prosperity. The avenues through which the most effective service can be rendered by members of the medical profession have taken definite and concrete form. Briefly, the plan is that all medical activities should coöperate with the Council of National Defense."

The Council of National Defense was created by Act of Congress on August 29, 1916, and consists of six members of the President's Cabinet. A subordinate body is the Advisory Commission of the council, appointed by the President and consisting of seven members. The Medical Committee of the Advisory Commission, of which Dr. Franklin H. Martin is chairman, consists of Surgeon-General Gorgas, Surgeon-General Braisted, Surgeon-General Rupert Blue, Col. J. R. Kean (of the American Red Cross), Dr. W. H. Welch, Dr. W. J. Mayo, and Dr. Frank F. Simpson.

In April, 1916, the Committee of American Physicians for Medical Preparedness was appointed by joint action of the American Medical Association, the American Surgical Association, the Congress of American Physicians and Surgeons, the Clinical Congress of Surgeons of North America, and the American College of Surgeons. To this committee was delegated the duty of formulating plans for ascertaining the civilian medical resources of the United States and for making available and coördinating these

for such purposes as circumstances might demand. The committee organized and appointed a State Committee in each state, of which committees all presidents and secretaries of the various state medical societies were made members. Dr. W. D. Haggard, Nashville, is the chairman of the Tennessee State Committee.

It was contemplated from the first that County Committees should be formed in every county in the land, and the time for the formation of these has now come. The Tennessee State Committee is now perfecting plans for the organization of County Committees, and it is hoped that all who are called upon will serve. The following information is printed for the guidance of members of County Committees:

"NAME AND PERSONNEL OF COUNTY COMMITTEES.

"It is the fixed policy of the Committee of American Physicians for Medical Preparedness that the various important medical interests and activities of each county shall be represented on the County Committees. This is done for the purpose of coördinating the important interests and activities so that the medical profession of the nation may present a compact and effective organization for the purpose of aiding effectively in the national defense. In order that this plan may be carried out with uniformity and precision throughout the country, the various State Committees have been requested to have all County Committees bear the following distinguishing name—to wit, 'The Auxiliary Medical Defense Committee of — County, in — State.' The State Committees have also been requested to provide that the County Committees shall include the following in their list of members:

"1. All members of the National Committee of the Committee of American Physicians for Medical Preparedness resident in the individual county.

"2. Members of the State Committee resident in or near the individual county.

"3. Representatives of the United States Army resident in the individual county.

"4. Representatives of the United States Navy resident in the individual county.

"5. Representatives of the United States Public Health Service resident in the individual county.

"6. Representatives of the State Board of Medical Examiners residing in the individual county.

"7. Representatives of the State or City Public Health Service.

"8. Ranking medical officer of the National Guard.

"9. President and secretary of the local Medical Officers' Reserve Corps Association, if there should be such an organization.

"10. Deans of medical schools.

"11. President and secretary of the County Medical Society.

"12. President and secretary of any other important medical societies.

"13. Medical director of the local Red Cross units.

"14. Other representative medical men.

"DUTIES OF COUNTY COMMITTEES.

"From time to time specific duties will be assigned to the various State and County Committees. These duties will be in accord with the policy of the Council of National Defense, and should be executed promptly and precisely by those who are called upon to coöperate in this manner with the Council of National Defense.

"The committees will call to their assistance those who have been appointed field aids by their various State Committees and such other physicians as they may desire to have coöperate with them.

"Among the specific duties which the County Committees are requested to perform at this time are the following:

"1. That these committees coöperate with the National and State Committees of the Committee of American Physicians for Medical Preparedness in their efforts to gain needful information regarding the civilian medical resources of their own communities and in their efforts to coördinate civilian medical activities for prompt mobilization in case of need.

"2. That they secure applicants—

"(a) For the Army Medical Corps. If the President should call the full complement of troops already authorized by Congress, the regular army would need about 1,200 additional medical officers. If 1,000,000 men should be called, a corresponding increase would be required.

"(b) For the Medical Officers' Reserve Corps. If war should come, 20,000 to 30,000 Medical Reserve officers should be enrolled.

"(c) For the Naval Medical Corps, which needs about 350 additional officers.

"(d) For the Coast Defense Reserve Corps of the Navy. Several hundred high-class reserve medical officers are desired.

"(e) For the National Guard, such numbers as may be required to bring your local National Guard to full strength.

"In the preparation for national defense the first thing needed will be medical officers.

"Physicians recommended for such service should be of the highest type. They should be free from suspicion of addiction to drugs or drink.

"Medical officers who go to field duty should by preference be under the age of forty-five.

"3. That they coöperate, individually and collectively, with the Medical Department of the army, navy, and Public-Health Service and with the Council of National Defense.

"4. That they coöperate with the Red Cross in their efforts to bring that organization to the highest point of efficiency.

Rural sanitation is a health protection to the city dweller.

THE PROCEEDINGS.

The minutes of the Nashville meeting, reports, proceedings of the House of Delegates, and all other matter pertaining to the affairs of the association as developed at the annual session, will be published in the May Journal.

The report of the Secretary is published in this number in order to keep down expenses.

The May Journal will also contain "sketches" of our new officers.

SOCIETY PROCEEDINGS

**EAST TENNESSEE MEDICAL
ASSOCIATION.**

The next semiannual meeting of the East Tennessee Medical Association will be at Dayton, May 17, 18, under the presidency of Dr. B. M. Tittsworth. Dr. W. N. Lynn, Knoxville, is the Secretary, and all communications relating to the association should be addressed to him. For two or three years the East Tennessee Association has had larger attendance upon its meetings than any of the "sectional" organizations of the state. More than one hundred were present at the last meeting. Dayton is on the C., N. O. & T. P. Railroad—the Southern—and is easily reached from Chattanooga on the south and from Harriman on the north.

**WEST TENNESSEE MEDICAL AND
SURGICAL ASSOCIATION.**

The twenty-sixth annual meeting of the West Tennessee Medical and Surgical Association will be held at Martin on May 24, 25, 1917. Dr. I. A. McSwain, the Secretary, requests that members who desire to present papers will send titles to him in order that he may include them in the printed program.

The attendance upon the meetings of this society of late years has been large, and the meetings have been lively and pleasant. Martin is easy to get to and easy to get away from, being a crossing point for two of West Tennessee's great railroads. The medical profession of the town and the county in which Martin is located is made up of splendid men, and the people generally are as good as the best anywhere. The twenty-sixth annual meeting of the West Tennessee should be a "record breaker."

DICKSON COUNTY.

The Dickson County Medical Society met in regular session at Dickson on the first Tuesday in March, and members present had the pleasure of hearing a most interesting paper on "Influenza" by Dr. W. J. Sugg. Discussion was opened by Dr. C. M. Lovell, and then all members present participated in further discussion of the paper, additional interest attaching to the subject by reason of the fact that influenza was unusually prevalent in the county at the time the paper was read. Several cases were reported, among them one of osteomyelitis, which had been neglected, with the result that a large sequestrum had to be removed from the tibia. This case was reported by Drs. Sugg and Weaver, and a very satisfactory recovery was indicated by the condition of the patient at the time of report.

The essayist for the April meeting will be Dr. A. G. Castleman, who will discuss "Cardio-Vascular-Renal Disease." Drs. Scott and Sugg are on the program to open the discussion on Dr. Castleman's paper.

HARTWELL WEAVER,
Secretary.

**JOHNSON CITY AND WASHINGTON
COUNTY MEDICAL SOCIETY.**

The Johnson City and Washington County Medical Society held its regular monthly session at Hotel Windsor on March 1, 1917, at 10:30 A.M. Members present: Drs. Long, H. D. Miller, Matthews, Broyles, West, Hartsook, Moss, Kennedy, Dulaney, Panhorst, Randall, Arnold, Jones, Estes, Sells, Cass. Visiting: Drs. E. T. Newell, Chattanooga; W. E. Luter, San Antonio; Ervin and Dulaney, Soldiers' Home; W. A. Sams, Unicoi.

Minutes of the previous meeting were read and approved.

Report of clinical case by Dr. Arnold: Patient, female; aged thirty-six; married; no children; previous history, negative, except typhoid; periods regular until last three; began a discharge and aborted; developed temperature and swollen abdomen. Advised curettement. This was done without relief. Temperature continued for six weeks; no pain or chills; developed bronchitis, but recovered. Typhoid suspected. Widal was not made. Evidently infection.

Dr. Sams reported a case of infection follow-

ing childbirth, with chills and fever. Uterus was curetted and packed with iodoform gauze. Temperature dropped to normal, but came up again. Second curettement was done and antistreptococci serum used. Case finally relieved, but discharge persisted.

These cases brought forth discussion, which condemned the frequent use of the curette and showed the importance of thorough cleaning of the uterus in the beginning.

Dr. Hartsook reported these two cases: First, a young lady, twenty-five years of age, presented herself for refraction. Pupils were dilated; fundus normal; no error of vision found; on further examination, enlarged and hypertrophied turbinates were found; deviated septum. These conditions were corrected and the patient was relieved. Second case: Acute mastoid in a young lady, developing after an attack of la grippe. Operation with good results. Emphasis was laid on the early recognition of middle-ear inflammation and drainage.

Dr. Randall reported a case of atropine poisoning. Patient was taking a "cough prescription," which called for one two-hundred-and-fortieth of a grain of atropia to the dram. The patient developed the characteristic symptoms of atropia poisoning in less than thirty minutes after he had taken it. Violent symptoms presented; but, with heroic treatment, the patient regained consciousness in eight hours and recovered without any apparent bad effect.

Other interesting case reports and discussions were made by Drs. Luter, Long, Miller, Sells, West, and Dulaney.

Adjournment was then taken for dinner. All members were escorted to the private dining room by Dr. Moss, who was host on this occasion, and an elaborate course dinner was served.

At 1 P.M. the society reconvened, and at this time heard Dr. E. T. Newell, of Chattanooga, discuss "Surgery of the Blood Vessels." The author reviewed the history of blood-vessel surgery, and said that, while the subject was in its experimental stage, successful suturing and transplanting of vessels was being done; and after going into detail as to indications, points to be remembered for successful work, technic of operation, etc., he reported successful suturing of the trachial artery in two cases and radial in another, following injury. Lantern slides were used to illustrate these cases. He also reported

successfully transplanting blood vessels in the human subject. This excellent and instructive paper was highly appreciated by all present, and was discussed by several members present.

At this juncture Dr. C. J. Broyles read his paper on "The Relation of the General Practitioner to the Eye." The author said that every practitioner, though he did not practice ophthalmology, should at least be familiar with the salient points of ophthalmology, so that in cases of emergency he should know intelligently how to act. He emphasized the conditions which atropine and eserine should and should not be used in. Great stress was laid on the use of silver nitrate as a preventive of ophthalmia neonatorum, which is the cause of one-third of all blindness. The use of poultices in conjunctivitis was strongly condemned. The author discussed injuries to the eye and the presence of foreign bodies—their removal and treatment; also the effects of constitutional disease on the eye. The Doctor also suggested that every doctor should be familiar with pupillary reaction and its significance. The paper was well taken, and was discussed by several members present.

The following resolution was then offered by Dr. West:

"Resolved, That the Johnson City and Washington County Medical Society extend our thanks and appreciation to Dr. Newell for his most excellent paper on 'Surgery of the Blood Vessels'; also to Dr. Moss for the good luncheon served."

The resolution was carried by a standing vote.

The application of Dr. Hyder being favorably recommended by the Board of Censors, he was duly elected to membership.

Adjournment was then taken on motion of Drs. West and Case.

H. D. MILLER, *Secretary*.

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THE SECRETARY

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NURSES ASKED TO FIGHT CANCER.

Nurses, especially those engaged in public-health work, can do much to prevent unnecessary deaths from cancer, according to a special bulletin published by the American Society for the Control of Cancer. Many patients, especially women, it is pointed out, will speak to a nurse about the danger signals of this disease—such as lumps, persistent sores, ulcerations, and other irregularities—when they would hesitate to call a doctor. Attention to these apparently trivial conditions, says the bulletin, often means the actual prevention of cancer, or at least its discovery in the early stages, when the hope of cure is greatest.

In promoting the special education of nurses so that they may be prepared to act as advance scouts in discovering this insidious enemy, the Society for the Control of Cancer has obtained the coöperation of national, state, and local nurses' associations. All the leading schools of nursing have been urged to provide special lectures on the early signs of this disease, so that nurses, when they take up their professional work, may be equipped with the necessary knowledge—not to make a diagnosis themselves, but to see that people with suspicious symptoms receive prompt and competent professional advice. Through the coöperation of the National Organization for Public-Health Nursing the special bulletin above referred to is being sent to several thousand visiting nurses' associations and prominent individual nurses throughout the country. Copies may also be obtained from the American Society for the Control of Cancer, 25 West Forty-fifth Street, New York City.

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